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United States Court of Appeals for the Federal Circuit

01-1449, -1583, -1604, -1641, 02-1174, -1192

RAMBUS INC.,

Plaintiff-Appellant,

v.

INFINEON TECHNOLOGIES AG,
INFINEON TECHNOLOGIES NORTH AMERICA CORP.,
and INFINEON TECHNOLOGIES HOLDING NORTH AMERICA INC.,

Defendants-Cross Appellants.

DECIDED: January 29, 2003

Before RADER, BRYSON, and PROST, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* RADER. Dissenting opinion filed by *Circuit Judge* PROST.

RADER, Circuit Judge.

During trial, the United States District Court for the Eastern District of Virginia granted judgment as a matter of law (JMOL) and held that Infineon Technologies AG, Infineon Technologies North America Corp., and Infineon Technologies Holding North America Inc. (collectively Infineon) did not infringe Rambus Inc.'s patents. The jury later found Rambus liable for fraud associated with standard-setting activities on two computer memory technologies. On post-trial JMOL motions, the district court set aside a verdict of fraud on one of

the memory technologies, but permitted the fraud verdict to stand on the other technology. The court then issued an injunction against Rambus and awarded Infineon attorney fees.

Because the district court erred in its claim construction, this court vacates the grant of JMOL of noninfringement and remands for consideration under the revised claim construction. Additionally, because substantial evidence does not support the implicit jury finding that Rambus breached the relevant disclosure duty during its participation in the standards committee, this court reverses the denial of JMOL that let the fraud verdict stand. Based on the record evidence, the district court properly set aside the fraud verdict on the remaining technology. These holdings render the injunction moot and require this court to vacate and remand the attorney fees award for reconsideration in light of this opinion. The record evidence supports the district court's grant of JMOL Accordingly, this court vacates-in-part, reverses-in-part, affirms-in-part, and remands.

I.

Rambus develops and licenses memory technologies to companies that manufacture semiconductor memory devices. Rambus does not manufacture any memory devices itself, but relies instead on licensing its patent portfolio for revenue. In April 1990, Rambus filed U.S. Patent Application Serial No. 07/510,898 ('898 application) with claims directed to a computer memory technology known as dynamic random access memory (DRAM). The United States Patent and Trademark Office (PTO) determined that the '898 application covered multiple independent inventions. The PTO issued an eleven-way restriction requirement requiring Rambus to elect one invention to pursue in the '898 application. In response, Rambus filed numerous divisional and continuation applications based on the original '898 application—at least thirty-one of which have issued. Many of these patents claim aspects of a memory technology known as Rambus DRAM

(RDRAM). In April 1991, Rambus filed a patent application under the Patent Cooperation Treaty (WIPO application) claiming priority to the '898 application.

In December 1991, Rambus attended a Joint Electron Devices Engineering Council (JEDEC) meeting as a guest. Rambus officially joined JEDEC in February 1992. JEDEC is a standard-setting body associated with the Electronic Industries Association (EIA).[1] JEDEC member companies participate on various committees to develop standards for semiconductor technologies. Committee JC-42.3 drafts standards for random access memory (RAM), a common component in computers, printers, and other electronic devices. JEDEC meetings are open meetings, but nonmembers must receive an invitation to attend. Minutes of the JEDEC meetings and copies of the published JEDEC standards are available to members and nonmembers alike. Both JEDEC and EIA have a written patent policy encouraging the adoption of standards free of patented items or processes. At least by 1993, the EIA/JEDEC patent policy required members to disclose patents and patent applications "related to" the standardization work of the committees.

During Rambus's membership on committee JC-42.3, JEDEC adopted a standard for synchronous dynamic random access memory (SDRAM). SDRAM increases the speed at which a central processing unit (CPU) can read or write memory by synchronizing itself with the CPU's clock speed. JEDEC incorporated four technologies into its SDRAM standard that are relevant to this case: programmable CAS latency, programmable burst length, externally supplied reference voltage, and two-bank designs. JEDEC adopted and

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[1] Since 1991, both JEDEC and EIA have changed their names. JEDEC now is known as the JEDEC Solid State Technology Association. EIA is known as the Electronic Industries Alliance.

published its SDRAM standard in early 1993. Since 1993, JEDEC has published several revisions of the standard.

Rambus attended its last JEDEC meeting in December 1995, and officially withdrew from JEDEC in June 1996. In December 1996, JEDEC began work on a standard for double data rate-SDRAM (DDR-SDRAM), the successor to SDRAM. DDR-SDRAM doubles the transfer rate between the CPU and memory device by supporting data transfers on both the rising and falling edge of each clock cycle. The JEDEC DDR-SDRAM standard ultimately incorporated four technologies that had been discussed in general before Rambus's withdrawal in 1996. Those technologies include: source-synchronous clocking, low-voltage swing signaling, dual clock edge, and on-chip phase locked loop/delay locked loop (PLL/DLL). JEDEC adopted and published the DDR-SDRAM standard in 2000.

In September 1993, Rambus disclosed its first issued RDRAM patent, U.S. Patent No. 5,243,703 ('703 patent), a divisional of the '898 application, to JEDEC during a committee meeting. As a divisional, the written description of the '703 patent is substantially identical to that of the '898 application. At that same meeting, another JEDEC member also disclosed Rambus's WIPO application to the committee. Rambus did not disclose any patent applications to JEDEC.

After leaving JEDEC Rambus filed more divisional and continuation applications based on the '898 application. Four of the patents that issued from those applications are at issue in the present case, namely U.S. Patent Nos. 5,954,804 ('804 patent), 5,953,263 ('263 patent), 6,034,918 ('918 patent), and 6,032,214 ('214 patent). Rambus filed the applications that ripened into these four patents between February 1997 and February 1999. Again, the written description of each of these patents is substantially identical to that of the '703 patent and the '898 application. The first of these four patents issued in 1999.

In late 2000, Rambus sued Infineon, a manufacturer of semiconductor memory devices (including SDRAM and DDR-SDRAM) and a member of JEDEC, for infringement of the patents-in-suit. Rambus alleged infringement of fifty-seven claims in the four patents. Infineon counterclaimed for fraud under Virginia state law. Infineon alleged that Rambus committed fraud by not disclosing to JEDEC its patents and patent applications "related to" the SDRAM and DDR-SDRAM standards. After construing the claims, the district court granted JMOL of noninfringement in favor of Infineon under Rule 50(a) of the Federal Rules of Civil Procedure. Fed. R. Civ. P. 50(a); *Rambus, Inc. v. Infineon Techs. AG*, No. 3:00CV524, slip op. at 1-2 (E.D. Va. May 2, 2001); *Rambus, Inc. v. Infineon Techs. AG*, No. 3:00cv524, slip op. at 1-2 (E.D. Va. May 30, 2001). Infineon's fraud counterclaims were tried to a jury. The jury found that Rambus committed fraud during SDRAM and DDR-SDRAM standardization. Rambus moved for JMOL of no fraud on both the SDRAM and DDR-SDRAM verdicts. Alternatively, Rambus requested a new trial. The district court denied JMOL on the SDRAM fraud verdict. The court granted JMOL on the DDR-SDRAM fraud verdict, holding that substantial evidence did not support the jury's verdict because Rambus left JEDEC before work officially began on the DDR-SDRAM standard. *Rambus, Inc. v. Infineon Techs. AG*, 164 F. Supp. 2d 743, 767 (E.D. Va. 2001). The district court also denied Rambus's request for a new trial on the SDRAM verdict, but conditionally granted a new trial on DDR-SDRAM should this court reverse that grant of JMOL. The court issued an injunction against Rambus, *Rambus, Inc. v. Infineon Techs. AG*, No. 3:00cv524, slip op. at 35 (E.D. Va. Aug. 9, 2001), and awarded Infineon attorney fees, *Rambus, Inc. v. Infineon Techs. AG*, 155 F. Supp. 2d 668, 691 (E.D. Va. 2001).

Both parties appealed to this court, which has jurisdiction under 28 U.S.C. § 1295(a)(1) (2000). Rambus appeals the denial of JMOL and the denial of a new trial on the SDRAM

verdict. Additionally, Rambus appeals the court's claim construction, the grant of JMOL of noninfringement, the injunction on domestic suits, and the attorney fees award. Infineon cross-appeals the grant of JMOL on the DDR-SDRAM verdict and the court's refusal to enjoin Rambus's pending foreign suits against Infineon.

II.

This court reviews a grant or denial of JMOL without deference by reapplying the JMOL standard. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454, 46 USPQ2d 1169, 1172 (Fed. Cir. 1998) (en banc); *Dennis v. Columbia Colleton Med. Ctr., Inc.*, 290 F.3d 639, 644-45 (4th Cir. 2002); Fed. R. Civ. P. 50(a)(1). For matters submitted to and decided by a jury, this court will affirm a grant or reverse a denial of JMOL only "if the jury's factual findings are not supported by substantial evidence or if the legal conclusions implied from the jury's verdict cannot in law be supported by those findings." *Cybor Corp.*, 138 F.3d at 1454; *Havird Oil Co. v. Marathon Oil Co.*, 149 F.3d 283, 289 (4th Cir. 1998). This court draws all reasonable inferences in favor of the prevailing party without substituting its view of conflicting evidence for that of the jury. *SIBIA Neurosciences, Inc. v. Cadus Pharmaceutical Corp.*, 225 F.3d 1349, 1355, 55 USPQ2d 1927, 1930 (Fed. Cir. 2000); *Dennis*, 290 F.3d at 645.

Before deciding whether an accused device infringes asserted claims, a court must first construe the claim language to determine the meaning and scope of the claims. *Cybor Corp.*, 138 F.3d at 1454. This court reviews claim construction without deference. *Id.* at 1456.

This court reviews state law causes of action under the applicable state law for matters not committed to this court's exclusive jurisdiction. *Univ. of W. Va. Bd. of Trustees v. Vanvoorhies*, 278 F.3d 1288, 1296, 61 USPQ2d 1449, 1453 (Fed. Cir. 2002); *Hunter Douglas, Inc. v. Harmonic Design, Inc.*, 153 F.3d 1318, 1338, 47 USPQ2d 1769, 1783 (Fed. Cir.

1998). Thus, this court applies Virginia commonwealth law to the fraud actions.

Although Virginia has not stated clearly whether detecting the existence of a duty to disclose is a question of law or fact,[2] the district court considered the issue a question of fact. As such, the jury had the responsibility to interpret and construe the written EIA/JEDEC patent policy. On appeal, neither party contests the district court's submission of this issue to the jury. Therefore, this court will analyze the existence of a duty to disclose as a question of fact.[3]

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[2] Two cases provide limited insight on this issue. The first—a Fourth Circuit case reviewing a Virginia fraud action—states that "[t]he duty to disclose and the reasonableness of reliance" are questions decided by the jury in light of various factors. *Bank of Montreal v. Signet Bank*, 193 F.3d 818, 834 (4th Cir. 1999). Notably, however, the Fourth Circuit supports its statement with only two case citations—one to a Fourth Circuit case from South Carolina and one to a Fifth Circuit case—neither of which say the existence of a duty to disclose is a factual question. In the second case a Virginia court states that whether a duty to speak exists "under the circumstances" is an issue for the fact-finder. *Hiett v. Barcroft Beach, Inc.*, 22 Va. Cir. 240, 242 (Va. Cir. Ct. 1990). Even so, a jury determination that a duty exists "under the circumstances" does not mean the existence of the duty is a factual question. *See, e.g.*, *State Farm Fire & Cas. Co. v. Owen*, 729 So.2d 834, 839-40 (Ala. 1998) ("[T]he jury . . . determine[s] only the disputed facts upon which the alleged duty rests, not the existence of the duty itself. . . . If the judge finds that the circumstances as alleged would be enough to create a legal duty, then he should instruct the jury as to what that duty would be if these circumstances did exist. The jury then decides whether those circumstances indeed existed.").

[3] While this court reviews this as a factual question, a review of the relevant law of other states and Virginia's law on other tort duties strongly suggests that this issue may well be a legal question with factual underpinnings. For example, according to the Restatement, "whether there is a duty to the other to disclose the fact in question is always a matter for the determination of the court." Restatement (Second) of Torts § 551 cmt. m (1976 Main Vol.). Moreover, Virginia, like most states, considers contract construction a legal question for the court, *Craig v. Dye*, 526 S.E.2d 9, 11 (Va. 2000), and the asserted duty in this case arises from a written contract. A number of states treat the existence of a disclosure duty as a question of law, and the breach of

A district court may award a prevailing party attorney fees under 35 U.S.C. § 285 in exceptional cases. This court reviews without deference the district court's application of the proper legal standard under § 285. *Brasseler, U.S.A. I, L.P. v. Stryker Sales Corp.*, 267 F.3d 1370, 1378, 60 USPQ2d 1482, 1487 (Fed. Cir. 2001); *cf. Reactive Metals & Alloys Corp. v. ESM, Inc.*, 769 F.2d 1578, 1582, 226 USPQ 821, 824 (Fed. Cir. 1985). In reviewing a § 285 award, this court reviews underlying factual findings, including whether a case is exceptional, for clear error and underlying legal conclusions without deference. *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1186, 33 USPQ2d 1823, 1833 (Fed. Cir. 1995). If the case is found to be exceptional, the district court enjoys broad discretion to make an award, a determination that this court reviews for an abuse of discretion. *Brasseler*, 267 F.3d at 1379. If the factual or legal underpinnings of the award partially are reversed, this court may vacate the award and remand for further evaluation by the district court. *Molins*, 48 F.3d at 1186.

III. Claim Construction and Infringement

After construing the asserted claims, the district court granted JMOL in favor of Infineon, holding that Infineon did not infringe the claims as construed. On appeal, Rambus contests the construction of five terms in the four patents-in-suit, namely: "integrated circuit device," "read request," "write request," 'transaction request," and "bus." The parties agree that, with one exception, the terms have the same meaning in each claim at issue. The only exception is the term "integrated circuit device," which Infineon argues has a different meaning

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that duty as a question of fact. *See, e.g., Streeks, Inc. v. Diamond Hill Farms, Inc.*, 605 N.W.2d 110, 121 (Neb. 2000); *State Farm Fire*, 729 So.2d at 839-40; *cf. Bradford v. Vento*, 48 S.W.3d 749, 755 (Tex. 2001); *Carter Lincoln-Mercury, Inc. v. EMAR Group, Inc.*, 638 A.2d 1288, 1294 (N.J. 1994). Finally, Virginia treats many tort duties as questions of law. *Burns v. Johnson*, 458 S.E.2d 448, 451 (Va. 1995) ("The question whether a duty of care exists in a negligence action is a pure question of law."); *Acme Markets, Inc. v. Remschel*, 24 S.E.2d 430, 434 (Va. 1943).

in the '804 patent because of representations made to the PTO during prosecution of that patent.

Patent claim language defines the scope of the invention. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (en banc). As a general rule, claim language carries the meaning of the words in their normal usage in the field of the invention. *Toro Co. v. White Consol. Indus.*, 199 F.3d 1295, 1299, 53 USPQ2d 1065, 1067 (Fed. Cir. 1999). In other words, a claim term means "what one of ordinary skill in the art at the time of the invention would have understood the term to mean." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986, 34 USPQ2d 1321, 1335 (Fed. Cir. 1995) (en banc), *aff'd* 517 U.S. 370 (1996). Nevertheless, inventors may act as their own lexicographers and use the specification to supply implicitly or explicitly new meanings for claim terms. *Id.* at 980; *Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258, 1268, 59 USPQ2d 1865, 1870 (Fed. Cir. 2001) ("[A] claim term may be clearly redefined without an explicit statement of redefinition."); *Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344, 58 USPQ2d 1059, 1065 (Fed. Cir. 2001). Thus, to help determine the proper construction of a patent claim, a construing court consults the written description and the prosecution history. *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344, 47 USPQ2d 1418, 1424 (Fed. Cir. 1998).

While claims often receive their interpretative context from the specification and the prosecution history, courts may not read limitations into the claims. *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998). "This court has repeatedly and clearly held that it will not read unstated limitations into claim language." *N. Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1290, 55 USPQ2d 1065, 1072 (Fed. Cir. 2000); *see also Renishaw P'C v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248, 48

USPQ2d 1117, 1120 (Fed. Cir. 1998); *Markman*, 52 F.3d at 981.

A. Integrated Circuit Device

The district court construed "integrated circuit device" in claim 26 of the '804 patent to include a device identification register, interface circuitry, and comparison circuitry.

Claim 26 recites:

> 26. An integrated circuit device having at least one memory section which includes a plurality of memory cells, wherein the integrated circuit device outputs data on an external bus synchronously with respect to first and second external clock signals, the integrated circuit device comprises:
>
> a first internal register to store a value which is representative of a number of clock cycles to transpire before the integrated circuit device responds to a read request;
>
> delay locked loop circuitry to generate an internal clock signal using the first and second external clock signals;
>
> an interface circuitry, coupled to the external bus to receive a read request, the interface circuitry includes a plurality of output drivers, coupled to the external bus, to output data on the external bus in response to the internal clock signal, synchronously with respect to the first and second external clock signals and in accordance with the value stored in the first internal register.

'804 patent, col. 28, ll. 1-21. Nothing in the claim language indicates that "integrated circuit device" necessarily includes a device identification register, interface circuitry, and comparison circuitry. The terms "comparison circuitry" and "device identification register" do not appear anywhere in the

text of claim 26.[4] "Comparison circuitry" is different from the "delay locked loop circuitry" limitation recited in claim 26. Likewise, a "device identification register" is different from the limitation "first internal register to store a value which is representative of a number of clock cycles." Thus, the claim does not require comparison circuitry or a device identification register. The district court's construction did not merely clarify or construe the actual words of the claim. Without any claim language addressing comparison circuitry or a device identification register, the court's construction reads into the claim two new limitations not required by the claim language. *See N. Telecom*, 215 F.3d at 1290.

The district court erred by placing too much emphasis on a single introductory comment in the prosecution history of the '804 patent. This comment appeared in the prosecution history after the examiner rejected the pending claims in light of U.S. Patent No. 4,458,357. Responding to the rejection, the patentee submitted twenty-six new claims, four of which were independent claims. In accompanying remarks, the patentee stated:

> These newly submitted claims are directed to a memory device (or an integrated circuit having memory) having (1) an *internal register for storing an identification value*, (2) *interface circuitry* to receive a request on an external bus, and (3) *comparison circuitry* to determine whether the identification information in the request

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[4] Claim 26 does recite an "interface circuitry" limitation. While it is proper to construe claim 26 as requiring interface circuitry, it technically is not proper to read the "interface circuitry" limitation into the meaning of the term "integrated circuit device" itself. The generic term "integrated circuit device" has a broad and accepted meaning within the art that does not depend on the limitations of claim 26. Therefore, in construing the meaning of this broad generic term, this court does not include limitations from specific patent claims.

> corresponds to the identification value in the internal register—wherein when the identification information corresponds to the identification value, the memory device responds to the request.

While the first three independent claims (issued claims 1, 15, and 23) recited, with some modifications, the three limitations listed above, the fourth independent claim (issued claim 26) recited only one of the above listed limitations. Specifically, claim 26, the claim at issue here, includes only the "interface circuitry" limitation. Claim 26, however, contains two other limitations not listed above: an internal register to store a value representative of a number of clock cycles and delay locked loop circuitry.

The prosecution history statement introduces in general terms the new claims. In this sense, the statement properly introduces three features that appear in some of the claims. This general introductory statement, however, is not correct in suggesting that these features appear in each of the new claims. This incorrect statement in the prosecution history does not govern the meaning of the claims. Therefore, consistent with *Intervet America, Inc. v. Kee-Vet Laboratories, Inc.*, 887 F.2d 1050, 12 USPQ2d 1474 (Fed. Cir. 1989), the imprecise statement in the prosecution history does not limit claim 26. The claim language itself controls the bounds of the claim, not a facially inaccurate remark during prosecution.

The patent at issue in *Intervet* involved a vaccine for a poultry disease. *Id.* at 1051. In that case the examiner rejected the pending claims because they were not limited to a single vaccination. The examiner said that a single vaccination limitation would distinguish the invention over the prior art. *Id.* at 1053-54. The prosecuting attorney amended three of the claims to recite "single administration," but did not so amend the remaining claims. *Id.* at 1054. In accompanying remarks, the attorney inaccurately described all the claims as "restricted to a single vaccination scheme." *Id.* After this erroneous

remark, the examiner had two interviews with the attorney and made two examiner's amendments before allowing the claims. *Id.* Reviewing this prosecution history, this court in *Intervet* held that the claims control over a loose remark in the course of prosecution:

> When it comes to the question of which should control, an erroneous remark by an attorney in the course of prosecution of an application or the claims of the patent as finally worded and issued by the [PTO] as an official grant, we think the law allows for no choice. The claims themselves control.... [I]t is not for the courts to say that they contain limitations which are not in them.

Id. The *Intervet* court thus did not restrict all of the claims to a single vaccination. *Id.*; *see also Hockerson-Halberstadt v. Avia Group Int'l*, 222 F.3d 951, 957, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000).

The present case parallels *Intervet*. Here, claim 26 does not contain all the limitations found in claims 1, 15, and 23 of the '804 patent. The prosecuting attorney's incorrect description of the four new claims does not govern over the language of those claims. Moreover, in this case, the examiner made an examiner's amendment and amended each of the claims—including claim 26—after this untrue remark by the prosecuting attorney. In this context, a reasonable competitor would not rely on an untrue statement in the prosecution history over the express terms of the claims. In the present case, like *Intervet*, this court perceives no justification for reading unstated limitations into claim 26.

The term "integrated circuit device," as used in claim 26, instead receives its ordinary meaning to one of skill in this art as a "circuit constructed on a single monolithic substrate, commonly called a 'chip.'" *See Rambus, Inc. v. Infineon Techs. AG*, No. 3:00cv524, slip op. at 70 (E.D. Va. March 15, 2001)

(Rambus argues for this construction.); *cf. The New IEEE Standard Dictionary of Electrical and Electronic Terms* 662 (5th ed. 1993); *IBM Dictionary of Computing* 347 (10th ed. 1994); *see also Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002).

B. Read Request

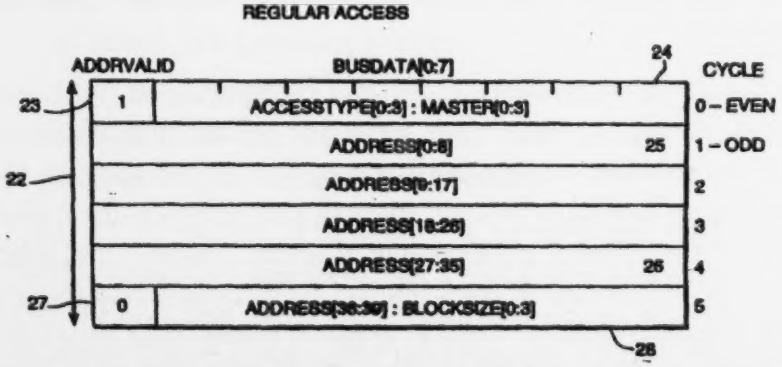
The district court construed "read request" to mean "a series of bits transmitted over the bus that contain multiplexed address and control information needed to request a read of data from a memory device." The court similarly construed "write request" and "transaction request" by replacing the language "needed to request a read of data from a memory device" with "needed to request a write of data from a memory device" and "needed to perform a transaction over the bus with a memory device."

Claim 18 of the '918 patent is representative of the claims reciting a "read request:"

> 18. A method of operation of a synchronous memory device, wherein the memory device includes a plurality of memory cells, the method of operation of the memory device comprises:
>
> receiving an external clock signal;
>
> receiving first block size information from a bus controller, wherein the first block size information defines a first amount of data to be output by the memory device onto a bus in response to a *read request*;
>
> receiving a first request from the bus controller; and
>
> outputting the first amount of data corresponding to the first block size information, in response to the first *read request*, onto the bus synchronously with respect to the external clock signal.

'918 patent, col. 26, ll. 13–27 (emphases added). The relevant claim language thus recites only that data is output onto a bus in response to a "read request."

Both parties agree that the term "read request" has no unambiguous ordinary meaning to one of skill in the art. Infineon argues that because the claims contemplate a response to a "read request," the "read request" must contain all information necessary to perform the requested read. Thus, Infineon argues that the "read request" must include both address and control information. Rambus agrees that in order to actually perform a read the device must be given address and control information. Rambus asserts, however, that such address and control information is part of the "request packet," not the "read request." Rambus argues that "read request" refers only to an instruction to the memory device to perform a read action. According to Rambus, the "read request" is one component of the "request packet"—comprising the first four bits of the packet. Figure 4 of the '918 patent illustrates a "request packet:"



As shown above, the "request packet" has multiple fields, including an AccessType field, Address fields, and a BlockSize field. Rambus contends that the four-bit AccessType field contains the "read request." The first bit instructs the memory device to perform a read; the next three bits tell the device what

type of read to perform (*e.g.*, page read, normal access read, etc.).

The district court interpreted the claim language requiring a response to a "read request" to mean that the "read request" must include address and control information. To the contrary, the claim language itself shows the fallacy of holding that outputting data in response to a "read request" necessarily implies that the read request must contain all information necessary for a memory device to respond. Claim 18 recites receiving a "block size" that defines an amount of data to be output onto a bus in response to a read request. By specifying the "block size" as separate from the "read request," claim 18 indicates that the block size is not part of the read request. Nevertheless, block size, which tells the device how much data to read, is necessary to permit the device to respond to a read request.[5] Thus, even though the device needs a block size to respond, such block size is not part of the read request. *See* '918 patent, col. 24, l. 58–col. 25, l. 3 (Claim 1 recites providing a "block size" to the memory device in one limitation and issuing a "read request" to the memory device in another limitation.).

In addition, the district court's interpretation of "read request" conflicts with other passages of the specification. While the memory device must respond to a read request, the specification indicates that the address and control information is part of the request packet—not the read request. In other words, the specification does not use read request and request packet interchangeably. Rather, it shows a difference between a read request and a request packet. Each reference to address and control information consistently indicates that such

---

[5] To tell the memory device what data to read, the controlling device (e.g., the CPU) may provide a start and stop point for the data location, or provide a start point and a value for how much data to read (i.e., block size). The claimed invention uses the "block size" method.

information is a part of the request packet, which the specification defines as "a contiguous series of bytes containing address and control information." '918 patent, col. 8, l. 59–col. 9, l. 4; *see also* col. 9, ll. 24–43; col. 6, ll. 61–62 (defining request packet as "a sequence of bytes comprising address and control information"); col. 9, ll. 11–13 (request packet has control information). Other than in the abstract and the claims, the term "read request" appears only twice in the specification. *See id.*, col. 9, l. 2 & col. 12, ll. 33-35. Neither reference to "read request" suggests the presence of address and control information. The specification merely indicates that the "read request" requests data from a memory device and specifies what type of read (*e.g.*, page mode, normal mode, etc.) to perform. *See id.*, col. 9, l. 39–col. 10, l. 39; col. 8, l. 66–col. 9, l.3 & Figure 4.

Moreover, the dependent claims demonstrate that a read request is distinct from a request packet. Dependent claims 27 and 28, which depend from claim 18, recite:

> 27. The method of claim 18 wherein the first block size information and the first read request are included in a request packet.
>
> 28. The method of claim 27 wherein the first block size information and the first read request are included in the same request packet.

id., col. 27, ll. 6–11. Although one of ordinary skill would know that a memory device needs a block size and address and control information to respond, the claims do not state that such information forms a part of the read request. In fact, the claims do not even require that such information be part of the same request packet. Even though the memory device needs this information, the claims need not recite every component necessary to enable operation of a working device. *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1303, 50 USPQ2d 1429, 1435 (Fed. Cir. 1999) (applicant need not claim every

feature of a working device). The district court's construction would render claim language in dependent claims 27 and 28 meaningless. This court disfavors such a construction. *Comark Communications*, 156 F.3d at 1187; *Wright Med. Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1445, 43 USPQ2d 1837, 1841 (Fed. Cir. 1997).

The district court also relied on a statement made during prosecution as an admission by Rambus that a "transaction request" includes "identification information." At the time of this statement, however, pending claim 186 (issued claim 1 of the '918 patent) referred to "a transaction request *including* identification information." The examiner amended the claim by inserting the word "packet" after each occurrence of "request" in pending claim 186, which in fact clarifies that identification information is part of a request packet, not a "transaction request." Notably, the examiner did not make such amendments to pending claims 200 and 208, which recited "identification information *and* a read request." *See also* '804 patent, col. 26, ll. 4-5.

Finally, this court perceives no justification for including multiplexing as a part of the meaning of "read request." Multiplexing, if necessitated by the claims, is applicable to the construction of the term "bus," not "read request." The claims do not support reading multiplexing into "read request."

From the correct perspective of one of skill in the art at the time of invention, the term "read request" means a series of bits used to request a read of data from a memory device where the request identifies what type of read to perform. The terms "write request" and "transaction request" mean, respectively, a series of bits used to request a write of data to a memory device and a series of bits used to request performance of a transaction with a memory device.

C. Bus

The district court construed "bus" to mean "a multiplexed set of signal lines used to transmit address, data and control information." In its *Markman* opinion, the district court noted Rambus's proposed ordinary meaning of "bus," but held that the patentees acted as their own lexicographer by redefining "bus" to be a multiplexed bus. Multiplexing refers to the sharing of a single set of lines to send multiple types of information. Under the district court's construction, the "bus" carries three types of information: address, data, and control information.

The term "bus" is very common in the electrical arts and has a well-recognized meaning in such arts, namely, a set of signal lines (e.g., copper traces on a circuit board) to which a number of devices are connected, and over which information is transferred between devices. *The New IEEE Standard Dictionary of Electrical and Electronic Terms* 141 (5th ed. 1993). The claims generally recite outputting data over a "bus." The claims do not specify that the bus multiplexes address, data, and control information. *See* '918 patent, col. 26, ll. 19-27. Nothing in the claims compels a definition different from the ordinary meaning of "bus." Before according "bus" this meaning, however, this court must consider the usage and meaning of the term as used in the relevant context of the specification.

In general, most references to "bus" in the specification do not limit the ordinary meaning of this term. Only two references potentially limit the meaning of "bus" in the context of the specification. In the Summary of the Invention, the patentee stated that the "present invention" includes a bus for carrying substantially all address, data, and control information. '918 patent, col. 3, ll. 50-60. The patentee further stated that "the bus carries device-select information without the need for

separate device-select lines connected directly to individual devices."[6] *Id.* In the Detailed Description, the patentee stated:

> The present invention is designed to provide a high speed, multiplexed bus for communication between processing devices and memory devices .... The bus carries substantially all address, data and control information needed by devices for communication with other devices on the bus. In many systems using the present invention, the bus carries almost every signal between every device in the entire system. There is no need for separate device-select lines since device-select information for each device on the bus is carried over the bus. There is no need for separate address and data lines because address and data information can be sent over the same lines.

'918 patent, col. 5, ll. 36-46. *See also* '918 patent, col. 5, ll. 52-53. While clear language characterizing "the present invention" may limit the ordinary meaning of claim terms, *see Scimed*, 242 F.3d at 1343; *Bell Atlantic*, 262 F.3d at 1268, such language must be read in context of the entire specification and the prosecution history. Although the above references, taken alone, may suggest some limitation of "bus" to a multiplexing bus, the remainder of the specification and prosecution history shows that Rambus did not clearly disclaim or disavow such claim scope in this case. *See Inverness Med. Switz. Gmbh v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1372, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002) (statements made during prosecution were not a clear and unambiguous disclaimer of a

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[6] The multiplexed bus eliminates device-select (point-to-point) connections by multiplexing control information with address and data information. This elimination of point-to-point connections is one focus of the multiplexed bus. *See* '918 patent, col. 2, ll. 12-15 (While some prior art buses multiplexed address and data information, they retained point-to-point connections for control information.); col. 2, ll. 16-19, 26-34, 36-42, and 44-49.

claim scope). Thus, Rambus did not limit the ordinary meaning of "bus" in the patents-in-suit.

In this case, the prosecution history shows that a multiplexing bus is only one of many inventions disclosed in the '898 application. Although some of Rambus's claimed inventions require a multiplexing bus, multiplexing is not a requirement in all of Rambus's claims. A careful review of the prosecution histories of the patents-in-suit shows that Rambus expressly recited multiplexing in the claim language for claims limiting the bus to the inventive multiplexing bus. For example, original claim 1 of the '898 application recites a "bus including a plurality of bus lines for carrying substantially all address, data and control information needed by said memory device." Other original claims further require that the "bus carry[ ] device-select information without the need for separate device-select lines connected directly to individual semiconductor devices." This claim language indicates that Rambus did not redefine "bus" in the specification to be a multiplexing bus. Indeed, it is because Rambus viewed "bus" under its ordinary meaning that Rambus specified—in the claim language—that the inventive multiplexing bus carries substantially all address, data, and control information and that the bus operates without the need for device-select lines.

Several restriction requirements issued by the PTO also clarify that some of the inventions described in the '898 application did not require the multiplexing bus. The PTO issued an eleven-way restriction requirement during prosecution of the '898 application. Later, during prosecution of U.S. Patent No. 5,841,580 (the grandparent of the '918 patent and the parent of the '263 patent), the PTO issued a two-way restriction, dividing the claims into two distinct groups: a multiplexing bus group (Group I) and a latency invention group (Group II). That two-way restriction stated:

> [T]he memory device in Group I does not require the access-time register of Group II, and the

> semiconductor device in Group II does not require the plurality of conductor [sic] being multiplexed to receive an address as claimed in Group I.

Rambus elected to prosecute the latency claims from Group II in the '580 patent. Therefore, the claims of the '580 patent do not require a multiplexing bus. The claims of the '580 patent, however, do recite a "bus." *See* '580 patent, col. 24., l. 46. By stating that the latency claims, which recited a "bus," do not require multiplexing, the PTO demonstrated an understanding of "bus" that is not limited to a multiplexing bus.

The specification and prosecution histories, taken in their entirety, convince this court that Rambus did not redefine "bus" to be a multiplexing bus in the patents-in-suit. None of Rambus's statements constitute a clear disclaimer or disavowal of claim scope. In these patents, the term "bus" carries its ordinary meaning as a set of signal lines to which a number of devices are connected, and over which information is transferred between devices.

In sum, the district court erred in its construction of each of the disputed terms. In light of the revised claim construction, this court vacates the grant of JMOL of noninfringement and remands for the district court to reconsider infringement.

IV. Fraud

The jury found that Rambus committed actual fraud by not disclosing to JEDEC patents and patent applications related to the SDRAM and DDR-SDRAM standards. The district court denied JMOL on the SDRAM fraud verdict, but granted JMOL of no fraud on the DDR-SDRAM fraud verdict. Rambus appeals the denial of JMOL on the SDRAM verdict, arguing it did not have patents or applications related to the SDRAM standard while at JEDEC. Infineon cross-appeals the grant of JMOL on the DDR-SDRAM verdict, arguing that the court did not give proper deference to the jury verdict.

To prove fraud in Virginia, a party must show by clear and convincing evidence: 1) a false representation (or omission in the face of a duty to disclose), 2) of a material fact, 3) made intentionally and knowingly, 4) with the intent to mislead, 5) with reasonable reliance by the misled party, and 6) resulting in damages to the misled party. *ITT Hartford Group, Inc. v. Va. Fin. Assocs., Inc.*, 520 S.E.2d 355, 361 (Va. 1999); *Bank of Montreal v. Signet Bank*, 193 F.3d 818, 826 (4th Cir. 1999). A party's silence or withholding of information does not constitute fraud in the absence of a duty to disclose that information.[7] *Bank of Montreal,* 193 F.3d at 827. Generally, "'fraud must relate to a present or a pre-existing fact, and cannot ordinarily be predicated on unfulfilled promises or statements as to future events.'" *Patrick v. Summers*, 369 S.E.2d 162, 164 (Va. 1988) (quoting *Soble v. Herman*, 9 S.E.2d 459, 464 (Va. 1940)); *see also ITT Hartford Group*, 520 S.E.2d at 361. In some cases, however, misrepresentations about a party's present intentions also may give rise to fraud. *Elliott v. Shore Stop, Inc.*, 384 S.E.2d 752, 756 (Va. 1989). Failure to

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[7] The dissent suggests that Rambus is liable for fraud on the basis that it had relevant superior knowledge and a duty to disclose that knowledge because of a special relationship with other JEDEC members. Virginia courts have recognized that the duty to disclose may arise from a contractual or fiduciary relationship. *Cohen v. Mastie*, 31 Va. Cir. 96, 99 (1993); *see also Devansky v. Dryvit Sys., Inc.*, 52 Va. Cir. 359, 361 (2000); *Allen Realty Corp. v. Holbert*, 227 Va. 441 (1984) (plaintiff's accountant failed to disclose offers for the purchase of plaintiff's assets). In the present appeal, the parties do not argue that Rambus's duty was based on a fiduciary or confidential relationship with Infineon. Even absent waiver of such an argument, a disclosure duty based on a fiduciary relationship seems unlikely. Rambus and Infineon are competitors. There is no basis for finding that Rambus and Infineon shared a fiduciary relationship solely by virtue of their JEDEC membership. Indeed, the implications of holding that mere membership forms a fiduciary duty among all JEDEC members could be substantial and raise serious antitrust concerns. Here, the parties argued the existence of a duty based on only Rambus's act of joining JEDEC with awareness of the EIA/JEDEC policy. There is no other proper basis for finding the existence of a disclosure duty.

prove even one of the elements of fraud—such as existence of a duty to disclose—defeats a fraud claim. *Bank of Montreal*, 193 F.3d at 826.

A. Duty to Disclose

Before determining whether Rambus withheld information about patents or applications in the face of a duty to disclose, this court first must ascertain what duty Rambus owed JEDEC. Mr. John Kelly, EIA's general counsel since 1990 and the person responsible for implementing the EIA/JEDEC patent policy, testified that three manuals, namely, EP-3-F, EP-7-A, and JEP 21-I, contain the patent disclosure policy. Before 1993, JEDEC's policy discouraged the adoption of standards that "call for the exclusive use of a patented item or process." The policy also discouraged standards referring to a "patented item or process" unless the committee knew "the technical information covered by the patent" and the patentee agreed to license the patent under reasonable terms.

JEP 21-I, published in October 1993, stated:

> EIA and JEDEC standards . . . that require the use of patented items should be considered with great care. . . . [C]omittees should ensure that no program of standardization shall refer to a product on which there is a known patent unless all the relevant technical information covered by the patent is known . . . .

The manual also included a policy revision expressly adding "pending patent[s]" to the policy language. The manual further stated:

> The Chairperson . . . must . . . call attention to the obligation of all participants to inform the meeting of any knowledge they may have of any patents, or pending patents, that might be involved in the work they are undertaking. Appendix E (Legal Guidelines Summary) provides copies of

> viewgraphs that should be used at the beginning of the meeting to satisfy this requirement.

Appendix E read, in relevant part, as follows :

> EIA/JEDEC PATENT POLICY SUMMARY
>
> Standards that call for the use of a patented item or process may not be considered by a JEDEC committee unless all of the relevant technical information covered by the patent or pending patent is known to the committee, subcommittee, or working group.

Appendix E also provided that patentees or applicants must agree to license others to use the patent "for the purpose of implementing the standard(s)." Thus, Appendix E prohibited standards that "call for use of a patented item or process" unless all information "covered by the patent or pending patent" was known and a "license . . . for the purpose of implementing the standard(s)" was available under reasonable terms. Mr. Willibald Meyer, Infineon's JEDEC representative, explained how members learned of the EIA/JEDEC patent policy. He testified:

> Q. In your experience in the years you have attended JEDEC, Mr. Meyer, how is it that members learn what the patent policy is? Is it from reading manuals?
>
> A. Very unlikely.
>
> Q. How is it that members of JEDEC learn of the patent policy?
>
> A. Well, you go to the meetings, you attent [sic] a couple of times, and you learn from how the meeting works and how things are dealt with.

Mr. Meyer further testified that the "patent policy" was discussed orally at each JC-42.3 meeting. Mr. Reese Brown, a JEDEC consultant who edited the standards and maintained the

activity log for committee JC-42, also testified that he learned of the patent policy from the Appendix E viewgraphs shown at the meetings. He testified:

> Q. When you went to the JC-42.3 meetings, did you look up on the wall when they put the patent policy on the wall?
>
> A. Yes, I read it on the screen.
>
> Q. And that's what you understood the patent policy to be?
>
> A. Yes.
>
> Q. And when you look at the minutes, they would have a copy of that patent policy attached to the minutes so in case you were dozing or doodling or typing on your computer, you could read the patent policy if you wanted?
>
> A. One could if they wanted to.
>
> Q. So in any event, that's where you got your understanding of the patent policy?
>
> A. Yes.

According to the written minutes of committee JC-42.3, JEDEC members were shown the "patent policy" as essentially recorded in Appendix E at each of the committee meetings. For example, the minutes of a July 21, 1992 meeting in Denver, Colorado, entitled "EIA/JEDEC Minutes of Meeting No. 63," indicate that members were shown the patent policy as contained in Attachment A to the minutes. Attachment A reads:

> EIA Policy
>
> 3.4 Patented Items or Processes
>
> Avoid requirements in the EIA Standards that call for use of a patented item or process. No program standard shall refer to a patented item or process

> unless all of the technical information covered by the patent is known to the formulating committee or working group . . . .

Other committee minutes indicate that this same language was displayed at meetings held in December 1993, in San Diego, California, and again in December 1995, in Dallas, Texas. The record does not indicate that the directive to the chairman was shown to JEDEC members. Instead, the record indicates that the only "patent policy" ever shown members was the policy as recorded in Appendix E.

The language of these policy statements actually does not impose any direct duty on members. While the policy language advises JEDEC as a whole to avoid standards "calling for the use of" a patent and the manual obligates the chairperson to remind members to inform the meeting of any patents or applications relevant to the work of the committee, this court finds no language—in the membership application or manual excerpts—expressly requiring members to disclose information. There is no indication that members ever legally agreed to disclose information.

Nevertheless, because JEDEC members treated the language of Appendix E as imposing a disclosure duty, this court likewise treats this language as imposing a disclosure duty. Assuming such a duty, however, the directive to the chairperson was not intended as a statement of the duty, but as a requirement on the chairperson to point members to the duty in Appendix E. Nothing in this record suggests that the directive to the chairperson is broader than the policy shown to members by the viewgraphs of Appendix E. Only the language of Appendix E was shown to members. Appendix E prohibited standards that "call for use of a patented item or process" and encouraged disclosure of information "covered by the patent or pending patent." It was that language that the chairperson was instructed to show members to inform them of their duty. That language links the disclosure duty to patents or applications

whose claims cover the proposed JEDEC standard. Further, the JEDEC policy permitted adoption of a standard covered by a patent if the claimed technology was available under reasonable license terms. Thus, JEDEC's policy identifies the duty to disclose based on the scope of claimed inventions that would cover any standard and cause those who use the standard to infringe.

Although the JEDEC policy does not use the language "related to," the parties consistently agree that the JEDEC policy language requires disclosure of *patents* "related to" the standardization work of the committee. Infineon, however, argues this language also requires disclosure of *patent applications* "related to" the committee's work. While both parties repeatedly treat the "related to" language as coextensive with the policy language, the parties differ in their interpretation of "related to." Rambus argues that "related to" means patents that read on or cover the standard. Although advocating a "more is better" interpretation, the necessary implication of Infineon's arguments also is that whether a patent or application is "related to" the standard depends on the claims of the patent or application.

Rambus disclosed the '703 patent in September 1993. JEDEC also learned of Rambus's WIPO application at the same meeting. Infineon argues that the '703 patent disclosed to JEDEC did not "relate to" the SDRAM standard, but that other undisclosed applications did "relate to" the SDRAM standard. Additionally, Mr. Meyer, Infineon's JEDEC representative, testified that he read the '703 patent and the WIPO application and concluded that they did not "relate to" the SDRAM standard. This conclusion is telling because the written description and drawings of the undisclosed patents and applications are identical to the disclosed '703 patent. The only material difference between the disclosed '703 patent and the undisclosed patents and applications appears in the claims. Accepting, as the jury also must have, Infineon's argument that

the '703 patent *is unrelated* to the JEDEC standard but that undisclosed patents and applications (with the same written description and drawings) *are related* to the standard, whether a patent or application is "related to" the standard necessarily must depend on the claims of the patent or application.

Indeed, other Infineon arguments evince that this interpretation of "related to" is correct. For example, Infineon states that the '703 patent "contained claims relating only to . . . RDRAM" and did not indicate that Rambus might file "applications based on the same specification, but with SDRAM-related claims." Accepting Infineon's arguments, again as the jury must have, the necessary implication of those arguments is that "related to"—and thus the disclosure duty—focuses on the claims.

Infineon's witnesses also imparted this meaning to the disclosure duty. Mr. Gordon Kelley, committee chairman for JC-42.3 and IBM's JEDEC representative, testified:

> Q. *Under what circumstances would a patent need to be disclosed to JEDEC?*
>
> A. If a member representing a company . . . is aware of a patent that their company holds that *reads to or applies to* a patent or patent claims or a [sic] application of patent or patent claims, then it is the obligation of that member to bring that information to the committee.
>
> Q. And *what do you mean by reads to or applies to?*
>
> A. That the patent—that *if you exercised the design or production of the component that was being standardized would require the use of that patent.*

In later testimony Mr. Kelley reemphasized the role of the claims in the disclosure duty, stating:

> It violates the JEDEC policy . . . of notifying the committee when there are patents issued that have—that *read on or apply directly to* the activities of a standards process without notifying the committee.

When asked what information should be disclosed to satisfy the disclosure requirement, Mr. Kelley responded:

> In my case and I think in most cases *I would paraphrase what I understood the claims of the patent or patent application to be.* I never actually brought patents and distributed them. . . . I always felt it was the responsibility of the companies if I identified a patent for them to get the information. *But I would paraphrase the claims as I understood them and why or how they applied to the proposal subject.*

Moreover, Mr. Meyer, Infineon's JEDEC representative, testified similarly:

> Q. *What was your understanding of the relationship that a patent had to have in order to be disclosed under JEDEC's patent policy?*
>
> A. Well, *it had to be related to the work at JEDEC in the sense that it described features that were necessary to meet the standard.*
>
> Q. In other words, *in order to practice a standard, it would be necessary to use the feature that was patented, right?*
>
> A. *Yes.*
>
> Q. So if the patent would not be required to be used in order to practice the standard, it didn't have to be disclosed, right?
>
> A. If it was—as I said, if it was a circuit, which could be done differently, then no.

Infineon's arguments and Infineon's witnesses provide evidence of the members' understanding of the JEDEC policy. Both indicate that the relevant disclosure duty hinges on whether the issued or pending claims are needed to practice the standard.[8] This construction accords with the primary JEDEC goal of adopting open standards that can be practiced without unreasonable license fees or terms. Infineon provides no evidence that the policy required (or that JEDEC members understood the policy to require) disclosure of patents and applications not necessary to practice the standard. On this record, a reasonable jury could find only that the duty to disclose a patent or application arises when a license under its claims reasonably might be required to practice the standard.

To the extent Infineon may argue that the duty to disclose also encompasses situations where an application describes (but does not claim) technologies under discussion at JEDEC, this court notes that Rambus disclosed the '703 patent and thus satisfied such a construction of the duty. With disclosure of the '703 patent, JEDEC had the written description for all the undisclosed patents and applications. Indeed, all JEDEC members had notice of the written description of all of Rambus's patents before adopting its SDRAM standard. The only thing Rambus did not disclose to JEDEC—and thus the necessary focus of the fraud inquiry—was the claims in those patents and applications. The inquiry, therefore, is claim-specific and standard-specific.

Thus, Rambus's duty to disclose extended only to claims in patents or applications that reasonably might be necessary to practice the standard. In other words, this duty encompassed any patent or application with claims that a competitor or other

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[8] The dissent quotes testimony where Mr. Kelley stated that JEDEC members should disclose patents "that applied to a proposed standard." As noted above, however, Mr. Kelley later testified that when he said "reads to or applies to" he meant that "the design or production of the component that was being standardized would require the use of that patent."

JEDEC member reasonably would construe to cover the standardized technology. This does not require a formal infringement analysis. Members are not required to perform a limitation-by-limitation comparison or conduct an equivalents analysis. Rather, the disclosure duty operates when a reasonable competitor would not expect to practice the standard without a license under the undisclosed claims. Stated another way, there must be some reasonable expectation that a license is needed to implement the standard. By the same token, the disclosure duty does not arise for a claim that recites individual limitations directed to a feature of the JEDEC standard as long as that claim also includes limitations not needed to practice the standard. This is so because the claim could not reasonably be read to cover the standard or require a license to practice the standard.

To hold otherwise would contradict the record evidence and render the JEDEC disclosure duty unbounded. Under such an amorphous duty, any patent or application having a vague relationship to the standard would have to be disclosed. JEDEC members would be required to disclose improvement patents, implementation patents, and patents directed to the testing of standard-compliant devices—even though the standard itself could be practiced without licenses under such patents. The record contains further evidence suggesting that the JEDEC members did not perceive the disclosure duty to include obligations of that breadth. For example, the record contains a tracking list showing only five disclosed applications and sixty disclosed patents from a committee membership of over fifty companies. Those companies include many leading manufacturers heavily involved in memory technology, such as IBM, Toshiba, Intel, AMD, Samsung, Siemens, Hyundai, Micron, Sun Microsystems, Hewlett-Packard, Hitachi, Motorola, LG Semicon, and Fujitsu. If these members perceived the duty to encompass any patent or application with a vague relationship to the JEDEC standard, the record would

likely contain a substantially greater number of disclosed patents and applications. Even Infineon's own actions demonstrate that the disclosure duty was not so broad because Infineon itself did not disclose to JEDEC an application on testing SDRAM. Presumably, it did not disclose that application because it was not necessary to practice the SDRAM standard.

To weigh the legal sufficiency of the jury verdict, this court also must consider when the duty to disclose arises. This inquiry will show whether Rambus participated in JEDEC proceedings at a time when it had a duty to disclose. The JEDEC policy itself does not state when a committee member's duty arises. Infineon argues that discussions before formal consideration of a standard trigger the disclosure duty. To the contrary, Mr. Gordon Kelley, the committee chairman and IBM's JEDEC representative, testified that the disclosure duty arose at formal balloting of a proposed standard. Formal ballots include a check box next to a statement certifying that the voter is not aware of any patents involved in the ballot. Mr. Kelley did not testify that the EIA/JEDEC policy required or that members understood the policy to require disclosures before formal balloting. Mr. Kelley's testimony does not support Infineon's position that the disclosure duty arises before formal consideration of a standard.

The other witness Infineon relies on for the position that JEDEC imposes the duty before formal votes is Mr. Reese Brown. Mr. Brown, a JEDEC consultant who edits the standards and maintains the activity log for committee JC-42, testified that the disclosure duty arises only if the "material [being discussed] is described as part of a legitimate proposal that's aimed at a standard." Giving Infineon the benefit of all reasonable inferences, Mr. Brown's testimony at most indicates that the disclosure duty arises when proposals are aimed at a particular standard. Infineon proffers no substantial evidence that the disclosure duty applicable to one standard is triggered

by discussion of proposals aimed at a different standard. As discussed above, the disclosure inquiry here is claim-specific and standard-specific. Substantial evidence does not support Infineon's position that the duty arises before legitimate proposals are aimed at the standard (*i.e.*, before work formally begins on the standard). The most a reasonable jury could conclude is that the disclosure duty is triggered when work formally begins on a proposed standard.

The record does not show that JEDEC applied the disclosure duty to a member's plans or intentions. The patent policy requires disclosure of certain "patents or pending patents"—not disclosure of a member's intentions to file or amend patent applications. Indeed, Mr. Kenneth McGhee, secretary of committee JC-42, Mr. John Kelly, and Mr. Meyer all testified that the policy did not address a member's intentions to file future patent applications. Mr. Kelly further testified that because antitrust laws discourage direct competitors from discussing market-driving innovations, members "were not supposed to reveal their future plans." Further, Mr. Meyer testified that the disclosure duty did not require members to disclose plans to modify applications. Thus, the record supports only the conclusion that a member's intentions to file or amend applications do not fall within the scope of JEDEC's disclosure duty.[9]

In this case there is a staggering lack of defining details in the EIA/JEDEC patent policy. When direct competitors participate in an open standards committee, their work necessitates a written patent policy with clear guidance on the committee's intellectual property position. A policy that does not define clearly what, when, how, and to whom the members

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[9] Because JEDEC's minutes are available to non-members and because there are no confidentiality agreements between individual members, a member's revelations of future intentions to file an application likely would jeopardize some foreign patent rights.

must disclose does not provide a firm basis for the disclosure duty necessary for a fraud verdict. Without a clear policy, members form vaguely defined expectations as to what they believe the policy requires—whether the policy in fact so requires or not.[10] JEDEC could have drafted a patent policy with a broader disclosure duty. It could have drafted a policy broad enough to capture a member's failed attempts to mine a disclosed specification for broader undisclosed claims. It could have. It simply did not.

B. Breach of Duty to Disclose

This court next reviews the record for substantial evidence to support the jury's verdict that Rambus breached the JEDEC duty during both SDRAM and DDR-SDRAM standardization. Because the patents-in-suit were filed after Rambus left JEDEC in 1996, Infineon relies on other applications Rambus had pending before its 1996 withdrawal from JEDEC. The only thing not disclosed to JEDEC was the claims in these applications. As discussed above, Infineon had to show by clear and convincing evidence that these undisclosed claims reasonably read on or cover the particular standard under consideration by JEDEC. In other words, Infineon had to present clear and convincing evidence that there is a reasonable expectation that the standard cannot be practiced without a license under the undisclosed claims.

1. SDRAM Standard

In its opinion denying JMOL, the district court identified several patents and applications that it said had claims directed to the SDRAM standard. Specifically, the district court stated that Rambus had pending claims "related to" five technologies:

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[10] Just as lack of compliance with a well-defined patent policy would chill participation in open standard-setting bodies, after-the-fact morphing of a vague, loosely defined policy to capture actions not within the actual scope of that policy likewise would chill participation in open standard-setting bodies.

two-bank designs, externally supplied reference voltage, PLLs, programmable CAS latency, and programmable burst length.

The trial court stated that the '898 application contained claims related to two-bank design and burst length technology. Further, the trial court identified patent application number 07/954,945 ('945 application), filed in September 1992, as having claims directed toward programmable burst length. This application issued in June 1994 as U.S. Patent No. 5,319,755 ('755 patent). The court also identified application numbers 07/847,651 ('651 application), filed in March 1992, and 07/847,961 ('961 application), filed in March 1992 but later abandoned, as having claims directed toward CAS latency. The '651 application issued in February 1997 as U.S. Patent No. 5,606,717. The court held that patent application 07/847,692 ('692 application), filed in March 1992 but later abandoned, had PLL claims. Finally, the court stated that application number 07/847,532 ('532 application), filed in March 1992, contained claims directed to an externally supplied reference voltage. This application issued as U.S. Patent No. 5,473,575 ('575 patent) in December 1995.

This court has examined the claims of the cited applications as well as the relevant portions of the SDRAM standard. Based on this review, this court has determined that substantial evidence does not support the finding that these applications had claims that read on the SDRAM standard. The claims in the '945 application, which issued as the '755 patent, recited a multiplexed bus and a device identifier feature, neither of which are present in the SDRAM standard. For example, original claim 151 of the '945 application (issued claim 1) recited a bus "for carrying control information, addresses, and the data." Original claim 151 further stated that the control information provided for memory selection "without using any separate memory select line." Therefore, a manufacturer may practice the SDRAM standard without a license under the claims of the '755 patent. Similarly, claims in the '961 application were

limited to the device identifier feature and claims in the '651 application required the multiplexed bus. Thus, licenses under the claims of these applications or the '717 patent would not be necessary to practice the SDRAM standard.

To continue with this inquiry, the SDRAM standard does not use PLL technology, making the '692 application irrelevant. The claims of the '532 application, which the court identified as directed to an externally supplied reference voltage, recited voltage swings of less than one volt and did not read on the 3.3 volt voltage swing specified by the SDRAM standard. Therefore, a manufacturer could practice the SDRAM standard without a license under any claims of the '532 application. Substantial evidence does not support a finding that any of these patents or applications therefore fell within Rambus's disclosure duty. Finally, the district court stated that the '898 application had claims related to two-bank design and burst length. This court has reviewed all 209 claims in the '898 application. There is no substantial evidence to support a holding that the '898 application had claims that reasonably would be needed to practice the SDRAM standard. To the extent that the district court said there was evidence showing that Rambus had claims "relating to [two-bank and burst length technology]," this statement is true only if "related to" is construed more broadly than the duty as determined by this court.

Moreover, specific to this record, Rambus alleges that Infineon admitted at trial that the '755 and '575 patents were not related to the SDRAM standard. If Rambus is correct, this assertion further shows that no SDRAM manufacturer following the JEDEC standard would need a license under any of Rambus's undisclosed patents or applications.

Rambus asserts in its opening brief to this court that "no builder of an SDRAM under the JEDEC standard would need a license under any of the patents and applications relied on by the [trial] court." Rambus made this same argument in its

renewed JMOL motion, stating that it did not have "a single undisclosed patent claim, issued or pending, that any JEDEC member would have been required to license (even arguably) to practice the JEDEC standards at issue." Despite Rambus's repeated assertions (e.g., in its renewed JMOL motion, its opening brief to this court, and at panel hearing before this court) that these claims were not necessary to practice the SDRAM standard, Infineon does not directly address Rambus's arguments. Rather than deny Rambus's assertions, Infineon states only that "Rambus' argument is, at best, disingenuous, since . . . documents amply demonstrate that Rambus *believed* its pending patents covered the SDRAM standard." In effect, Infineon argues that Rambus' mistaken belief that its claims read on the SDRAM standard made its actions fraudulent. In other words, Infineon would expand the EIA/JEDEC patent policy to add a subjective belief component to the disclosure duty.

The JEDEC policy, though vague, does not create a duty premised on subjective beliefs. JEDEC's disclosure duty erects an objective standard. It does not depend on a member's subjective belief that its patents do or do not read on the proposed standard. Otherwise the standard would exempt a member from disclosure, if it truly, but unreasonably, believes its claims do not cover the standard. As discussed above, the JEDEC test in fact depends on whether claims reasonably might read on the standard. A member's subjective beliefs, hopes, and desires are irrelevant. Hence, Rambus's mistaken belief that it had pending claims covering the standard does not substitute for the proof required by the objective patent policy.

The record shows that Rambus's claimed technology did not fall within the JEDEC disclosure duty. The record shows at most that Rambus wanted to obtain claims covering the SDRAM standard. Some of that evidence does not put Rambus in the best light. Rambus thought it could cover the SDRAM standard and tried to do so while a member of an open

standards-setting committee. While such actions impeach Rambus's business ethics, the record does not contain substantial evidence that Rambus breached its duty under the EIA/JEDEC policy.

If evidence of Rambus violating its duty to disclose exists, Infineon did not place it in the record or provide it to this court. Infineon bore the burden of proving the existence of a disclosure duty and a breach of that duty by clear and convincing evidence. Infineon did not meet that burden. Infineon did not show *any* expectation that the patents and applications identified by the district court covered the SDRAM standard.[11] Instead, the record shows that, despite Rambus's best efforts, Rambus did not obtain SDRAM claims. Because there is no expectation that the undisclosed claims are necessary to implement the standard, these claims did not trigger Rambus's disclosure duty. Rambus's actions might constitute fraud under a different patent policy; however, they do not constitute fraud under this policy.

In sum, substantial evidence does not support the jury's verdict that Rambus breached its duties under the EIA/JEDEC policy. Infineon did not show the first element of a Virginia fraud action and therefore did not prove fraud associated with the SDRAM standard. No reasonable jury could find otherwise. The district court erred in denying JMOL of no fraud on the SDRAM verdict. Because of these holdings, the new trial and injunction issues are moot.

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[11] The dissent argues that Rambus bore the burden of showing that it "did not actually have any pending claims that read on the standard" as a defense to rebut Infineon's fraud case. Whether Rambus had claims that reasonably might read on the standard, however, goes to the question of whether Rambus breached its disclosure duty. It is not a defense for Rambus to prove, but an element of Infineon's fraud case.

2. DDR-SDRAM Standard

In granting JMOL of no fraud on the DDR-SDRAM verdict, the district court held that substantial evidence did not support the jury's verdict because Rambus withdrew from JEDEC before formal consideration of the DDR-SDRAM standard.

Rambus attended its last JEDEC meeting on December 6, 1995, and formally withdrew from JEDEC by a letter dated June 17, 1996. JEDEC did not begin formal work on the DDR-SDRAM standard until December 1996. JEDEC adopted and published the DDR-SDRAM standard in 2000.

Infineon argues that because some technologies that ultimately made their way into the DDR-SDRAM standard were discussed before Rambus's withdrawal, Rambus had a duty to disclose patents and applications "related to" the DDR-SDRAM standard. This court appreciates the building-block nature of such standard-setting activities. As indicated above, however, the disclosure duty, as defined by the EIA/JEDEC policy, did not arise before legitimate proposals were directed to and formal consideration began on the DDR-SDRAM standard. None of the evidence relied on by Infineon (e.g., survey ballot, technology proposals on the SDRAM standard) provides substantial evidence for the implicit jury finding that Rambus had patents or applications "related to" the DDR-SDRAM standard that should have been disclosed before the standard came under formal consideration.

Because Infineon did not show that Rambus had a duty to disclose before the DDR-SDRAM standard-setting process formally began, the district court properly granted JMOL of no fraud in Rambus's favor on the DDR-SDRAM verdict.

V. Attorney Fees

The district court held that Infineon was entitled to $7,123,989.52 in attorney fees and expenses under 35 U.S.C. § 285 as a prevailing party in the patent infringement suit and $2,382,782.87 in attorney fees for prevailing on its fraud

counterclaim. Because the attorney fees under § 285 and Virginia law were duplicative, the court awarded a total amount of $7,123,989.52 to Infineon.

The trial court based its finding of exceptionality on: Rambus's claim construction and infringement positions, the asserted fraud as inequitable conduct, and litigation misconduct. The court expressly found that each of these grounds individually supported finding this case exceptional. Because the award was not based solely on litigation misconduct, the court held that it was not necessary for Infineon to show a relationship between the requested fees and the litigation misconduct.

Given this court's modifications to the appealed claim construction and reversal of the SDRAM fraud verdict, neither the claim construction nor the fraud provides a basis for the § 285 award. The sole remaining ground for awarding fees under § 285 is the alleged litigation misconduct. The district court found that Rambus's misconduct included: failure to list documents on its privilege log, false and misleading testimony by Rambus executives, obfuscatory discovery responses, refusing to admit facts not genuinely at issue (e.g., date of Rambus's JEDEC membership), and destroying documents before suit but after sending cease and desist letters to Infineon. Although arguing that the award of fees was improper under § 285, Rambus addresses only the claim construction and the fraud grounds. In sum, Rambus does not contest the district court's holding of litigation misconduct.

Litigation misconduct and unprofessional behavior may suffice, by themselves, to make a case exceptional under § 285, *Epcon Gas Sys., Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1034, 61 USPQ2d 1470, 1479 (Fed. Cir. 2002). Indeed, the district court found that Rambus's misconduct alone supported the determination that this case was exceptional. Rambus has not shown that this holding is clearly erroneous. In cases deemed exceptional only on the basis of litigation

misconduct, however, the amount of the award must bear some relation to the extent of the misconduct. *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 831, 23 USPQ2d 1426, 1438 (Fed. Cir. 1992), *abrogated in part on other grounds* by *Markman*, 52 F.3d 967; *see also Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1553-54, 13 USPQ2d 1301, 1306-07 (Fed. Cir. 1989).

In sum, given this court's holdings on claim construction and fraud and the lack of apportionment between the award and the misconduct, this court vacates the attorney fees award and remands to the district court. On remand, the district court may consider whether Infineon remains a prevailing party, and if so, whether an award is warranted. If the court determines that an award is warranted, it will have the opportunity to set the amount of the award to redress the litigation misconduct.

Finally, because this court has reversed the SDRAM fraud verdict, Virginia common law no longer forms a basis for the award of fees. Thus, this court's reversal of the SDRAM fraud verdict compels a reversal of the $2,382,782.87 awarded to Infineon on its fraud counterclaim.

CONCLUSION

Because the district court erred in its claim construction, this court vacates the grant of JMOL of noninfringement and remands for consideration under the revised claim construction. Because substantial evidence does not support the jury's verdict that Rambus committed fraud associated with the SDRAM standard, this court reverses the denial of JMOL on the SDRAM fraud verdict. This court affirms the grant of JMOL on the DDR-SDRAM fraud verdict because the district court properly determined that substantial evidence did not support the implicit jury finding that Rambus had a duty to disclose patents and applications before formal consideration of a standard. Finally, this court vacates and remands the attorney fees award under § 285 and reverses the fee award under

Virginia common law. These holdings render the injunction and the new trial issues moot. Accordingly, this court vacates-in-part, reverses-in-part, affirms-in-part, and remands to the district court.

COSTS

Each party shall bear its own costs.

AFFIRMED-IN-PART, REVERSED-IN-PART, VACATED-IN-PART, and REMANDED

United States Court of Appeals for the Federal Circuit

01-1449, -1583, -1604, -1641, 02-1174, -1192

RAMBUS INC.,

Plaintiff-Appellant,

v.

INFINEON TECHNOLOGIES AG, INFINEON TECHNOLOGIES NORTH AMERICA CORP., and INFINEON TECHNOLOGIES HOLDING NORTH AMERICA INC.,

Defendants-Cross Appellants.

PROST, *Circuit Judge*, dissenting-in-part.

I respectfully dissent from section IV of the majority's opinion reversing the district court's denial of Rambus's motion for judgment as a matter of law on the issue of fraud. In my opinion, substantial evidence supports the jury's verdict that Rambus committed actual fraud under Virginia state law.

"The species of fraud are numberless, and like a chameleon, fraud is always colored by the context from which it arises. For that reason, it is usually for the jury to determine from the facts of a specific case, whether a fraud was committed." *Hirschberg v. G.W. Motors, Inc.*, 34 Va. Cir. 55, 60 (1994).

> Fraud is seldom, if ever, provable by direct testimony, but usually must be shown by circumstances which are sufficient to convince fair-minded men that they would not have occurred without the existence of a fraudulent purpose and

> design. Fraud is a mixed question of law and fact but, in most cases, is a jury question.

French v. Beville, 62 S.E.2d 883, 889 (Va. 1951); *Hirschberg*, 34 Va. Cir. at 60. In this case, the jury heard direct and circumstantial evidence supporting the conclusion that Rambus committed fraud in the context of its membership in the JEDEC standard setting organization.

Rambus attended its first JEDEC meeting in December 1991 and became a member in February 1992. At the time Rambus joined JEDEC, it had several pending patent applications derived from the '898 patent application, which has spawned more than a thousand claims in dozens of continuation and divisional applications. Rambus also had a specific plan for using its pending patent applications against anyone using the SDRAM standard. According to Rambus's June 18, 1992, business plan:

> [W]e believe that Sync DRAMs infringe on some claims in our filed patents; and that there are additional claims we can file for our patents that cover features of Sync DRAMs. Then we will be in position to request patent licensing (fees and royalties) from any manufacturer of Sync DRAMs. Our action plan is to determine the exact claims and file the additional claims by the end of Q3/92. Then to advise Sync DRAM manufacturers in Q4/92.

Rambus did not, in fact, inform anyone at JEDEC about its pending patent applications by the end of 1992. Instead, Rambus continued to attend JEDEC meetings for three more years, watching the SDRAM standard evolve and then amending its patent applications to try to cover features of the standard. Richard Crisp, Rambus's JEDEC representative, testified at trial about how "Rambus was intentionally drafting claims to intentionally cover the JEDEC SDRAMs":

Q. [Y]ou'll agree as an initial matter, right, that over the years '92, '93, '94 and '95 while you were attending meetings, JEDEC meetings for Rambus, at least during a portion of that time you were also working with the Rambus patent lawyers to change the claims in these applications? Right?

A. Yes.

Q. And you'll agree, won't you, sir, that at least on some occasions you went to a JEDEC meeting and then met with the Rambus patent lawyer? Right?

A. Yes. That's right.

Q. And you'll agree, won't you, that in the meetings you had with Rambus patent lawyers after a JEDEC meeting, that one source of the information for changing the Rambus patent claims was what you had seen at JEDEC with respect to the SDRAM standardization? Right?

A. Yes. That's right.

* * *

Q. And what you did in those meetings was work on new claims for the Rambus pending patent applications, and your intent was to make them broad enough that they would cover an SDRAM using the features that you had seen at the prior meetings. Isn't that a fact?

A. In some cases that was true.

The record is replete with additional and specific instances of Rambus employees attending JEDEC meetings, taking notes of what was discussed, identifying instances where Rambus already had claims covering what was discussed, and then seeking claims to cover what they learned at the JEDEC meetings. Yet Rambus "did not tell the people at JEDEC that what they were proposing for standardization infringed [its]

patents." Instead, after considering whether to "walk into the next JEDEC meeting and simply provide a list of patent numbers which have issued," Rambus concluded that it was better to remain silent because "we may not want to make it easy for all to figure out what we have, especially if nothing looks really strong." Rambus was even advised by its patent attorneys "to stop attending JEDEC" and that "if you go to the JEDEC meetings and stay silent and don't do anything else, you still have a risk that your patents will be unenforceable if you let the standard go forward and you don't tell them you have patents." Rambus was explicitly warned in 1992 that "you cannot mislead JEDEC into thinking that Rambus will not enforce its patent."

In 1995, members of JEDEC suspected that Rambus may have intellectual property rights related to the SDRAM standard. Richard Crisp "was asked [at a JEDEC meeting] to make a comment about the Rambus intellectual property position as it may relate to [a particular] proposal." Rambus responded in writing on September 11, 1995, that "[a]t this time, Rambus elects to not make a specific comment on our intellectual property position." Rambus attended its last JEDEC meeting in December 1995, and on June 17, 1996, Rambus formally withdrew from JEDEC. In its farewell letter to JEDEC, Mr. Crisp stated: "Recently at JEDEC meetings the subject of Rambus patents has been raised. Rambus plans to continue to license its proprietary technology on terms that are consistent with the business plan of Rambus, and those terms may not be consistent with the terms set by standards bodies, including JEDEC." Even after withdrawing from JEDEC, Rambus continued to furtively pursue its scheme to patent the evolving SDRAM standard by receiving reports from undisclosed attendees at JEDEC meetings named "Deep Throat" and "Secret Squirrel."

Rambus also tried to destroy the evidence of its plan to draft patent claims to cover the SDRAM standard. Rambus

implemented a "document retention policy" in 1998 in part "for the purpose of getting rid of documents that might be harmful in litigation." It also attempted to prevent discovery of relevant documents by failing to list them on its privilege log in this case. Having believed that they had destroyed or disguised the documents evidencing their plan to patent the SDRAM standard, Rambus's witnesses initially provided "false or misleading testimony." *Rambus, Inc. v. Infineon Techs. AG*, 155 F. Supp. 2d 668, 681 (E.D. Va. 2001). The false testimony was exposed after the court pierced the attorney-client privilege, compelling Rambus to produce previously concealed documents. *Id.* Once the Rambus witnesses were "confronted with documents obtained after the piercing of the attorney-client privilege" and "prodded by reference to the belatedly obtained documents," they were compelled to admit that they had in fact participated in the prosecution of Rambus's patent applications based on information learned at JEDEC meetings. *Id.*

The jury found that Rambus's thus exposed scheme amounted to fraud under Virginia state law. In Virginia, "[t]he elements of actual fraud are: (1) a false representation, (2) of a material fact, (3) made intentionally and knowingly, (4) with intent to mislead, (5) reliance by the party misled, and (6) resulting damage to the party misled." *Spence v. Griffin*, 372 S.E.2d 595, 598 (Va. 1988). Fraud may arise from "deliberate concealment or a relationship, contractual or otherwise, that would give rise to a duty to disclose." *Devansky v. Dryvit Sys., Inc.*, 52 Va. Cir. 359, 361 (2000). "For purposes of an action for fraud, concealment, whether accomplished by word or conduct, may be the equivalent of a false representation, because concealment always involves deliberate nondisclosure designed to prevent another from learning the truth." *Spence*, 372 S.E.2d at 599; *see also Norris v. Mitchell*, 495 S.E.2d 809, 812 (Va. 1998). When fraud is based on a violation of a duty to disclose, the scope of that duty "depends upon the circumstances of each case and the relationship

between the parties." *Hirschberg*, 34 Va. Cir. at 57. The duty can arise in many ways:

> The principle is basic in the law of fraud, as it relates to nondisclosure, that a charge of fraud is maintainable where a party who knows material facts is under a duty, under the circumstances, to speak and disclose his information, but remains silent. Situations evoking the duty of disclosure may arise in various ways in different cases. Generally speaking, however, in the conduct of various transactions between persons involving business dealings, commercial negotiations, or other relationships relating to property, contracts, and miscellaneous rights, there are times and occasions when the law imposes upon a party a duty to speak rather than remain silent in respect of certain facts within his knowledge, and thus to disclose information, in order that the party with whom he is dealing may be placed on an equal footing with him. In such a case a failure to speak amounts to a suppression of a fact which should have been disclosed, and is a fraud. In such circumstances, a failure to state a fact is actually equivalent to fraudulent concealment and amounts to fraud just as much as an affirmative falsehood.
>
> Among other ways, the obligation to communicate facts may arise from the fact that one of the parties has superior knowledge or means of knowledge; from the fact that confidential relations exist between them; from the fact that a party does something or says something which, for want of the disclosure, is false and deceptive; from the fact that he is placed or places himself in a position where his silence will convey a false impression; or from the fact that a statement or representation has been

> made in the bona fide belief that it is true, and before it is acted on, the party who has made it discovers that it is untrue.

Id. at 57-58 (quoting 37 Am. Jur. 2d, Fraud and Deceit, § 146).

Applying this Virginia state law, we must determine whether Rambus has shown on appeal that it is entitled to judgment as a matter of law that it did not commit actual fraud as found by the jury. Judgment as a matter of law is appropriate when "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a)(1). As the appellant, Rambus "must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied from the jury's verdict cannot in law be supported by those findings." *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir. 1984). Because the jury returned a general verdict on the ultimate legal question of whether Rambus committed fraud, "the law presumes the existence of findings necessary to support the verdict the jury reached." *Id.* at 893, 221 USPQ at 673. There are two issues underlying whether Rambus is entitled to judgment as a matter of law: the scope of Rambus's duty to disclose and whether Rambus violated this duty.

I.

According to the majority, "a reasonable jury could only find that the duty to disclose a patent or application arises when a license under its claims reasonably might be required to practice the standard." The majority then proceeds to apply this standard by determining *de novo* whether Rambus had any pending or issued claims while it was a member of JEDEC that read on the final JEDEC standard.

I believe that the evidence in this case supports a broader duty than the one applied by the majority. According to the

October 1993 JEDEC Manual of Organization and Procedure, section 9.3.1. titled "Committee Responsibility Concerning Intellectual Property":

> The Chairperson of any JEDEC committee, subcommittee, or working group must call to the attention of all those present the requirements contained in the EIA Legal Guides, and call attention to the obligation of all participants to inform the meeting of any knowledge they may have of any patents, or pending patents, *that might be involved in the work they are undertaking* (emphasis added).[1]

In my opinion, this portion of the manual clearly states the duty of disclosure required by all members of JEDEC, which is different from the duty applied by the majority in at least two respects. First, the statement "might be involved in" the standard is much broader than requiring disclosure of only claims reading on the standard. Second, the majority applies the duty to the final standard adopted by JEDEC, whereas the manual requires disclosure based on the "work they are undertaking," which is much more expansive than the final, completed standard resulting from the work undertaken. The majority's comparison of pending claims to the final standard does not take into account the possibility that, during the course of its work, the committee considers, debates, rejects and amends various proposals as the standard evolves.

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[1] At trial, the parties disputed whether the duty to disclose pending applications existed prior to October 1993, when JEDEC revised its manual to explicitly require disclosure of both patents and pending applications. Witnesses testified at trial that the duty required disclosure of patent applications prior to October 1993. I therefore focus on the issue of whether the duty to disclose was limited to claims reading on the standard, as discussed by the majority opinion, or to patents and applications that might be involved in the work on a standard.

Documents and witness testimony show that the members of JEDEC understood the JEDEC policy to require that its members disclose patents and pending patent applications that might be involved in the standard setting process. For example, during the development of the SDRAM standard, the committee discussed and then voted on many different features. The ballots for these votes stated that "[i]f anyone receiving this ballot is aware of patents *involving this ballot*, please alert the Committee accordingly during your voting response" (emphasis added). One witness interpreted the language on the voting ballot as requiring disclosure of "intellectual property that is *related to* that ballot or to the content of that ballot" (emphasis added). Similarly, the committee's stated "patent tracking" procedure included "review[ing] items identified as *of potential patent interest* at each meeting" (emphasis added). In addition, the minutes from the December 6, 1995, committee meeting state that "MOSAID noted that they had a pending patent on DLL and noted that it was a particular implementation and may not be required to use the standard." Gordon Kelley, the committee chairman and IBM's JEDEC representative, testified about Rambus's particular kind of conduct and whether it violated JEDEC's policies:

> Q. As the chairman at least during some period of time of some of the relevant JEDEC committees that we've talked about here today, did you think it was—or did you have any understanding as to whether it was acceptable practice for a JEDEC member to attend JEDEC meetings and then write claims to cover proposals in the JEDEC standards without disclosing those—those patent applications or patents that contain those claims?
>
> [objection]
>
> A. So, for the part of your question with regard to write claims, are you suggesting that someone attended the JEDEC meetings and then subsequent

> to the JEDEC meeting went and wrote claims that he or she learned at the JEDEC meeting? Is that what you mean?
>
> Q. Exactly, or modified existing patents to cover what was proposed at the JEDEC meetings?
>
> [objection]
>
> Q. And my question is did you have—did you have any understanding at the time as a JEDEC participant and also as the chairman whether that was acceptable behavior or not?
>
> [objection]
>
> A. This letter in January of 1994 to Buf Slay I think documents my position on that, that that cannot be allowed. It's in complete violation of JEDEC requirements of openness and fairness with regard to notification of patents and pending patents.

In addition, John Kelly, EIA's general counsel and the person responsible for implementing the EIA/JEDEC patent policy, testified that the JEDEC patent policy "required the early disclosure of patents and patent applications that are *or may be* required to comply with the standard" (emphasis added). Willibald Meyer, Infineon's JEDEC representative, likewise testified to a disclosure duty that was not limited to claims that read on the standard:

> The question is, sir, what was your understanding of the JEDEC patent policy in July, June and July 1992?
>
> THE WITNESS: The understanding was that the holders of a patent or an application should make the committee aware in the case that they were aware of that, the application of the patent which they held or had filed was *in relationship to the*

> *work in JEDEC* that we were doing (emphasis added).

Evidence also shows that even Rambus understood that it was required to disclose something more than only those claims reading on the SDRAM standard. Rambus timely disclosed only one of its patents to JEDEC: the '703 patent. However, Rambus admitted that the '703 patent "did not relate to JEDEC's SDRAM work but [was] directed to the implementation of Rambus'[s] RDRAM products." Rambus's compulsion to disclose this one patent is evidence that it broadly interpreted its duty of disclosure (although at the time, Rambus allegedly thought its duty was limited to issued patents, not pending applications).[2]

Certainly the majority opinion has identified testimony that can be interpreted to support its framing of the duty to disclose. However, the majority has applied the duty as being limited to the issue of whether claims read on the final standard, which is not consistent with the broader duty stated in the JEDEC manual or the other evidence identified above. Having identified substantial evidence supporting a sufficiently broad duty of disclosure to support the jury's verdict, our job is done. The applicable standard of review does not permit us to go further, reweighing the evidence and determining *de novo* that the duty should be defined or applied in a different manner. *See Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1192-93, 48 USPQ2d 1001, 1010 (Fed. Cir. 1998); *Hybritech*

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[2] The majority opinion states that to the extent the duty to disclose may encompass situations where an application describes but does not claim technologies under discussion at JEDEC, Rambus satisfied that duty by disclosing the '703 patent. I do not necessarily agree. Rambus's disclosure of a patent with clearly irrelevant claims does not absolve it of disclosing other applications with the same disclosure that might have relevant claims. I also note that there is evidence that Rambus's disclosure of the '703 patent was deceptive because JEDEC members were led to believe that Rambus had nothing else of relevance to disclose.

Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1375, 231 USPQ 81, 87 (Fed. Cir. 1986). I respectfully submit that the evidence described above compels us to conclude that there was sufficient evidence for the jury to find that Rambus had a duty to disclose pending and issued patents that might be involved in the development of the SDRAM standard, as stated in section 9.3.1 of the JEDEC manual.

The majority rejects the plain meaning of this section of the JEDEC manual for two reasons. First, the majority interprets Appendix E, not section 9.3.1, as giving rise to the duty to disclose. Second, according to the majority, a plain reading of section 9.3.1 of the manual would "render the JEDEC disclosure duty unbounded. Under such an amorphous duty, any patent or application having a vague relationship to the standard would have to be disclosed." I disagree with each of these reasons for not following the duty of disclosure stated in section 9.3.1 of the JEDEC manual.

With respect to the majority's first reason for rejecting the plain language of the manual, the majority relies on various testimony about the JEDEC "patent policy" to arrive at the conclusion that the members of JEDEC "treated the language of Appendix E as imposing a disclosure duty." This conclusion is contrary to testimony at trial showing that members of JEDEC understood Appendix E to describe the procedures to be applied once JEDEC has learned of a relevant patent, which is different from the requirement for disclosing relevant patents and patent applications. For example, Reese Brown testified that the "patent policy" has two distinct components:

> Q. Can you tell me what the patent policy is?
>
> A. Well, there are two parts. One that says that whenever material comes up in the committee for discussion and for voting, any members who are aware of any patent position or potential patent positions on the material should and are obligated

> to reveal that to the committee at that time. . . . The other portion of the policy has to do with if a specific patent material has been—or patent positions have been identified in connection with a proposal that is in the process of being approved for a ballot of standardization . . . .

John Kelly's testimony likewise distinguished between the disclosure requirement and the requirement for obtaining "assurances" from a patentee once JEDEC has learned of a relevant patent. Gordon Kelley had a similar view:

> Q. Between 1991 and 1996 what do you believe that patent policy in JEDEC to be?
>
> A. The stated policy was that, first of all, all member companies would notify the committee of patents that they were aware of that applied to a proposed standard. And another requirement was that they would agree that their licensing practice to all other member companies of JEDEC would be all companies would be licensed, excepting none, and that the license would be either free or offered at reasonable rates, without exception.

Later in his testimony, Mr. Kelley outright rejected the theory that the disclosure duty comes from the language describing what is to happen when JEDEC learns of a relevant patent:

> Q. About one line down at the end of the sentence it starts with the word if, if the committee determines that the standard requires the use of patented items, then the committee chairperson must receive a written assurance, and it continues.
>
> A. Yes.
>
> Q. Sir, does that language accurately reflect your understanding of when a patent needed to be disclosed?

> A. No. The language that I'm seeing here refers to a patent issue that has been raised in the committee. . . .

Thus, according to the understanding of these witnesses, the language of Appendix E is only one part of the "patent policy"—the part that describes the appropriate procedures that the committee must apply once a disclosure has been made. Appendix E does not describe the second part of the patent policy: the obligation to disclose relevant patents and patent applications, as stated in section 9.3.1 of the JEDEC manual. Moreover, the testimony quoted above from Reese Brown specifically refers to the duty to disclose when voting. The voting ballot parrots the language of section 9.3.1, requiring members to disclose patents and applications "*involving th[e] ballot*." The ballot therefore confirms the separate duty of disclosure as stated in section 9.3.1, not Appendix E.

The majority also implies that the members of JEDEC do not use their own manual to learn about the rules they must follow, including the duty of disclosure. This conclusion, too, is not supported by the testimony at trial. Rambus's Mr. Crisp described the manual as what "was used to tell people what the rules were." In addition, both Mr. Kelly and Mr. Brown testified that they learned about the rules of membership from the JEDEC manual. Mr. Kelly testified as follows:

> Q. So in the time period of 1991 through September of 1993, if we wanted to know the rules in JEDEC, we would look to [manual] JEP-21-H; is that right?
>
> A. Yes, sir. . . . The manual contains—without reference to this text, I can tell you that the manual contains a reference to our patent policy EIA JEDEC patent policy, which required the early disclosure of patents and patent applications that are or may be required to comply with the standard.

* * *

> Q. In that manual, under 9.3.1, Committee Responsibility Concerning Intellectual Property, were the members of JEDEC told that the chairperson of any JEDEC committee, subcommittee or working group must call attention to the obligations of all participants to inform the meeting of any knowledge they may have of any patents or pending patents that might be involved in the work they are undertaking?
>
> A. Yes, sir, it was.

Mr. Brown confirmed that the JEDEC manual is the appropriate place to look for the JEDEC patent policy. Shortly before the testimony quoted by the majority, Mr. Brown testified as follows:

> Q. Okay. Now, is a patent policy in writing so other people can know what it is?
>
> A. I believe that it is in writing.
>
> Q. Where would we find it?
>
> A. Probably in a document called "JEDEC"—something—"21" followed by a letter, which is a council-created documents which is a set of rules.[3]

In spite of this testimony, the majority concludes that members of JEDEC only learned about the disclosure duty from the viewgraphs displayed during meetings, and that there was no evidence that anything other than Appendix E was displayed at those meetings. Richard Crisp testified to the contrary:

> Q. You're aware, aren't you, sir, that as of October 1993, JEDEC published a new manual for the memory committee, right?

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[3] The particular JEDEC manual referred to herein is manual JEP-21-I, "JEDEC Manual of Organization and Procedure."

A. Yes, I know that now.

Q. And you know that in the manual, it specifically states that patent applications have to be disclosed as part of the JEDEC application, don't you?

A. Yes, I do know that.

Q. And during the time that you were going to these meetings, including in 1992 and in 1993, that new language was put up on the overhead projector at the meetings and dicussed by Jim Townsend, wasn't it?

A. I think it was.

* * *

Q. You were aware that the chairman of the committee put up on the overhead projector at the meetings the new language of the policy which specifically required the disclosure of patent applications, right?

[objection]

A. Yes.

Based on my reading of the record, I therefore believe that there was more than substantial evidence for the jury to have concluded that the disclosure duty is stated in section 9.3.1. of the JEDEC manual, not Appendix E, and that the members of JEDEC knew about this duty from the manual, voting ballots, and meetings.

The majority also rejects the language of section 9.3.1 as being overly broad and ambiguous. However, JEDEC was free to formulate whatever duty it desired and it is not this court's job to rewrite or reinterpret the duty on the basis that it is unbounded (which I do not think it is). JEDEC clearly knows how to draft rules and procedures with specificity when it so chooses. This point is amply demonstrated by the language of

Appendix E and other sections of the manual describing in detail the rules that must be followed once JEDEC learns of a relevant patent or patent application. The fact that JEDEC chose not to use the same kind of language when stating the duty of disclosure indicates that it did not desire to have a bright line rule, such as the one the majority has now imposed upon it. Instead of creating a duty that it believes JEDEC should have adopted, the court need only determine that there was sufficient evidence of what the duty is such that a jury could apply the duty to the conduct at issue and determine whether the duty was violated. In my opinion, there was sufficient evidence for the jury to have concluded that the duty to disclose was stated by the plain text of section 9.3.1 of the JEDEC manual, requiring the disclosure of patents and pending applications that might be involved in the work of the committee.

II.

Given the duty to disclose as stated in section 9.3.1 of the JEDEC manual, the next issue is whether substantial evidence supports a finding that Rambus failed to disclose pending and issued patents that might be involved in the development of the SDRAM standard. In my opinion, there is an abundance of such evidence.

The jury heard repeated admissions from Rambus that it had pending claims that not only related to the developing SDRAM standard, but even covered particular features of the standard.[4] For example, Rambus's business plan stated that "Sync DRAMs infringe claims in Rambus'[s] filed patents and other claims that Rambus will file in updates later in 1992." In a March 14, 1995, email, Richard Crisp wrote from a JEDEC meeting that "[t]aken along with the fact that they rely on an externally bussed reference, this should be anticipated by some

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[4] Thus, even under the duty to disclose as defined and applied by the majority, I believe that substantial evidence shows that Rambus violated that duty.

of our claims. I would say that the proposal may well infringe our work." Mr. Crisp wrote many emails during JEDEC meetings noting instances where he believed Rambus had pending claims that covered features of the evolving standard. In one such email, he wrote: "Note that many of the SDRAMs use an externally supplied reference voltage in the input buffers. I believe we have a claim we added to cover this configuration." Later in that same email, he said:

> Suggested that one NC be used for a Vref for a high performance interface. (again we need to check claims about "DRAM with input receivers using an externally supplied reference voltage"). We may be able to slow down or stop (or at least collect from) all of the CTT, GTL, and HSTL devices if this claim is allowed (Allen, I believe this is one of the claims you, Lester, Tracy and I wrote up in late '91, right?)

A 1993 document reporting on the status of drafting new claims derived from the '898 application stated: "(1) Writable configuration register permitting programmable CAS latency[.] This claim has been written up and filed. This is directed against SDRAMs. . . . (4) DRAM with multiple open rows . . . . This is directed against SDRAMs." At trial, Richard Crisp testified at length about a particular instance of a claim drafted to read on a low voltage swing feature of the SDRAM standard proposed at one of the JEDEC meetings:

> Q. So when we look at this here, we see Texas Instruments made a presentation for a synchronous DRAM 16 megabit, right?
>
> A. Yes.
>
> Q. If you look at one of [the] features they had on their 16 megabit presentation, it talks about they wanted a low voltage swing. Do you see that?
>
> A. Yes.

* * *

Q. And then a few days later, Jim Gasbarro [a Rambus engineer] is meeting with the Rambus patent lawyer talking about low swing signals on a DRAM. Do you see that?

A. Yes.

* * *

Q. Then in February of 1992, the lawyer sends you the draft amendment to the claims, correct? If you want to refresh your recollection, you can look at Defendants' Trial Exhibit 1531. You'll see it's a February 19th, 1992, letter. . . . And he refers to the enclosed revised draft preliminary amendment. Do you see that?

A. Yes, I do.

* * *

Q. So if you look at the preliminary amendment [at Plaintiff's Trial Exhibit 26], this is the final version that was filed on March 5th, 1992. Do you see that?

A. Yes.

Q. And if you look at the claims that were being added on March 5th, 1992, particularly claim 151, and if you look at the B element, it talks about low voltage swing signals, right?

A. Yes, it does.

Crisp also testified that in May of 1992, he met with Rambus's patent attorney to "add claims to our patent application broad enough to cover the SDRAM if the SDRAM uses mode register and programmable CAS latency." In perhaps the clearest admission of the case, Crisp testified that the features of double edge transfer, mode register,

programmable CAS latency, programmable burst length and PLL, DLL "were discussed there [at the JEDEC committee meetings] in some form or another, and we certainly had patent applications that covered aspects of those, of those technologies."

In my opinion, this evidence, which is just a portion of what Infineon presented at trial, is more than sufficient to support the finding that Rambus did in fact have pending patent claims related to, and even reading on, aspects of the SDRAM standard.[5] The majority, however, requires a different kind of proof than the clear admissions Rambus made through witness testimony and internal documents. By limiting the application of the duty to disclose to the issue of whether pending claims read on the final standard, the majority requires an element-by-element comparison of the limitations of a pending claim to the text of the SDRAM standard.[6] Infineon did not call an expert

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[5] The majority discounts Infineon's evidence that Rambus believed it had pending claims covering the standard. According to the majority, the JEDEC standard does not have a subjective belief component and a "member's subjective beliefs, hopes, and desires are irrelevant." I respectfully disagree. Rambus's statements that it believed it had pending claims covering the SDRAM standard is evidence that Rambus did in fact have claims covering the SDRAM standard. Moreover, Rambus's belief is a critical component of the overall fraud action, which includes the component of an intent to mislead. Rambus's beliefs about the scope of its duty are also relevant to what that duty actually is, just as the testimony cited in this dissent and in the majority opinion—where witnesses explain what they believe the duty to mean—is evidence of what the duty actually is.

[6] The majority states that its disclosure duty does not "require a formal infringement analysis," even though the majority then proceeds to determine whether the pending claims read on the standard. While determining whether there is a "reasonable expectation that a license is needed to implement the standard" allows some degree of latitude beyond a rote comparison of pending claims to the relevant standard, the majority's application of its standard is narrower than the duty it has defined. Its application of the duty is confined to consideration of whether or not pending claims read on the final standard.

In my opinion, the evidence I have identified in this opinion is sufficient to

witness at trial to make such a comparison; nor does it appear that Rambus presented a witness to prove the negative–that none of its pending claims ever read on any feature of the SDRAM standard discussed at the JEDEC meetings.

The district court, however, did identify six instances where Rambus had pending claims related to the SDRAM standard. *See Rambus, Inc. v. Infineon Techs. AG*, 164 F. Supp. 2d 743, 752-53 (E.D. Va. 2001). Rambus argues on appeal, and the majority accepts the argument, that none of these pending claims actually reads on the SDRAM standard. The majority has gone so far as to make a *de novo* comparison of the pending claims to the JEDEC standard in order to conclude that no claims could possibly read on the standard. I do not believe that we, as an appellate court of review, are in a position to make this finding because neither party appears to have given the jury the necessary evidence to make such an analysis in the first instance. *See Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1570, 7 USPQ2d 1606, 1608 (Fed. Cir. 1988) ("Obviously, a finding not made cannot be reviewed[.]"). Rambus points to no trial testimony supporting the argument it now makes on appeal. *See Shell Petroleum, Inc. v. United States*, 182 F.3d 212, 218 n.13 (3d Cir. 1999) ("The appellant is required to provide a record to support the claims it makes on appeal."). Certainly it was Infineon's burden to prove up fraud by clear and convincing evidence, and I believe Infineon did so based in part on Rambus's admissions; I do not believe Infineon was limited to proving its case by a limitation-by-limitation claim analysis. To the extent Rambus wanted to rebut Infineon's fraud case on the theory that Rambus did not actually

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show that a competitor might reasonably expect that it should obtain a license from Rambus, regardless of whether or not any claim reads on the standard. For example, a reasonable competitor could conclude that Rambus could obtain claims reading on the standard or that Rambus had a plausible claim construction or doctrine of equivalents theory that is not readily apparent from a simple reading of the claims.

have any pending claims that read on the standard, then it was incumbent on Rambus to prove this point at trial. It does not appear from the record before us that Rambus did so.

In addition, Rambus's briefing on appeal only addresses five of the six instances of relevant pending claims identified by the district court. Rambus makes no challenge to the district court's conclusion that "the evidence shows that, when JEDEC discussed adding a 2-bank design and burst-length technology to the SDRAM standard, Rambus had pending claims relating to those technologies pending in its first patent application, the '898 application." *Rambus*, 164 F. Supp. 2d at 752. Absent any argument to the contrary from Rambus, I presume that the district court is correct, notwithstanding the majority's independent conclusion based on its review of the pending claims, which in my opinion is beyond the scope of our review. *See Fromson*, 853 F.2d at 1570, 7 USPQ2d at 1608 ("This is the eighty-fourth case in which the court has been forced, ad nauseum, to remind counsel that it is a court of review, i.e., that it will not find the facts de novo, that it is not a place for counsel to retry their cases, [and] that its judges do not participate as advocates to fill gaps left by counsel at trial . . . ."); *Atl. Thermoplastics Co. v. Faytex Corp.*, 5 F.3d 1477, 1479, 28 USPQ2d 1343, 1345 (Fed. Cir. 1993) ("Fact-finding by the appellate court is simply not permitted."). Moreover, the majority concedes that the '898 application has claims relating to two-bank and burst length technology so long as "related to" is "construed more broadly than the duty" as defined by the majority.

Thus, in my opinion, substantial evidence supports a finding that Rambus failed to disclose pending patent applications that might be involved in the SDRAM standard. Rambus made numerous, unambiguous admissions to that effect and failed to prove anything to the contrary at trial.

CONCLUSION

This case is not an easy one, and I appreciate the majority's efforts to find a bright line rule for what constitutes fraud in the context of standard setting organizations. But the majority's application of its rule, that only claims reading on the standard need be disclosed, is not the JEDEC standard. JEDEC's disclosure policy required its members to disclose patents and pending applications that "might be involved in the work they are undertaking." While the majority rejected this standard as unbounded, nothing required JEDEC to formulate its policy with precision and clarity. And, while the majority may believe that JEDEC's "might be involved" standard is impossibly amorphous, the majority's restatement of the JEDEC policy might prove impossibly complex. The majority's application of its rule arguably requires a *Markman* claim construction, application of the doctrine of equivalents, a *Festo* analysis, and perhaps even a *Johnson & Johnston* analysis before anyone can say for sure whether a claim reads on a standard. As a result, an action for fraud will become more a federal patent case than a case arising under state law.

In any event, as I read the record, there is more than sufficient evidence upon which the jury could have concluded that Rambus had a duty to disclose pending and issued patents that might be involved in JEDEC's development of the SDRAM standard and that Rambus violated that duty. I respectfully submit that the jury's verdict should stand and I would therefore affirm the district court's denial of Rambus's motion for judgment as a matter of law.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

01-1449, -1583, -1604, -1641, 02-1174, -1192

RAMBUS INC.,

Plaintiff-Appellant,

v.

INFINEON TECHNOLOGIES AG,
INFINEON TECHNOLOGIES NORTH AMERICA CORP.,
and INFINEON TECHNOLOGIES HOLDING NORTH AMERICA INC.,

Defendants-Cross Appellants.

ORDER

United States Court of Appeals
for the Federal Circuit

ORDER

A combined petition for panel rehearing and for rehearing en banc having been filed by the CROSS-APPELLANTS,[1] and a response thereto having been invited by the court and filed by the APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on April 11, 2003.

FOR THE COURT,

Jan Horbaly
Clerk

Dated: April 4, 2003

cc: William K. West, Jr.
Kenneth W. Starr
Jay I. Alexander, Robert L. Harmon
Andrew Updegrove, Don W. Martens

RAMBUS INC V INFINEON TECHNOLOGIES, 01-1449, -1583, -1604, -1641, 02-1174, -1192 (DCT - 00-CV-524)

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[1] **N.B.** Four amicus/amici curiae briefs were filed (*see* order of March 7, 2003).

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Richmond Division

RAMBUS, INC.,

Plaintiff,

v. Civil Action No. 3:00cv524

INFINEON TECHNOLOGIES AG
and INFINEON TECHNOLOGIES
NORTH AMERICA CORP.

Defendants.

MEMORANDUM OPINION

This action involves four patents and fifty-seven claims. All four patents in suit descend from a common progenitor, the specification of which controls the patents in suit. The parties are in agreement that construction of the claims here at issue is confined to construction of eight disputed terms ("bus," "block size," "read request," "write request," "transaction request" "first external clock signal," "second external clock signal" and "integrated circuit device") each of which, with but one exception,[1] has the same meaning in each claim in issue in all four patents in suit. Hence, the agreed upon scope of claim construction is to construe the eight terms.

The parties have briefed the issues, have presented evidence at a hearing conducted pursuant to the requirements of

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[1] The parties agree that all the terms have the same meaning throughout with the exception of "integrated circuit device." The Defendants contend that this term has a different meaning in one patent due to representations made to the Patent and Trademark Office during the prosecution of that patent.

Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), and have argued orally. Against this background, the eight disputed terms, and hence the claims, are accorded the constructions set forth below.

BACKGROUND

In 1990, the co-founders of Rambus, Inc. ("Rambus"), Mark Horowitz and Paul Michael Farmwald, filed a patent application describing numerous inventions designed to increase the operating speed of memory devices in computers. The Patent Office determined that this application, U.S. Patent App. No. 07/510,898 ("the '898 application"), actually contained 11 independent and distinct inventions, required Rambus to select only one of those inventions to pursue in the '898 application, and allowed Rambus to file divisional applications on the remaining inventions described in the '898 application. Rambus did precisely that, electing to pursue one invention within the '898 application and thereafter filing ten more applications in the next six months. Subsequently, continuation and divisional applications are filed on these ten applications; and thus, to date, Rambus has been granted 31 patents based on the 1990 '898 application. Numerous applications are currently pending.

By way of background, the patented inventions have to do with computer memory devices called Dynamic Random Access Memory ("DRAM") and a system and devices for increasing the speed at which data or information is transferred between the DRAM and the Central Processing Unit ("CPU") of a computer. The DRAM is a high-seed, short-term memory device where information being used by the CPU is stored. The patents in suit describe numerous inventions respecting the memory interface and a new type of "bus" which carries information or data. The "Field of Invention" section of the specification, common to all patents in suit, gives the following overview of the inventions:

> [a]n integrated circuit bus interface for computer and video systems is described which allows high speed transfer of blocks of data, particularly to and from memory devices, with reduced power consumption and increased system reliability. A new method of physically implementing the bus architecture is also described.

U.S. Patent No. 6,034,918 (issued March 7, 2000) ("the '918 patent"), col. 1, 11. 20-25.[2]

On August 8, 2000, Rambus instituted this action for the infringement of four of its patents against Infineon Technologies AG (a German corporation), Infineon Technologies, Inc. (a German corporation) Infineon Technologies North American Corp. (a Delaware corporation) and Infineon Technologies Holding North America, Corp. (a Delaware corporation) (collectively referred to as "Infineon"). The first of the patents in suit, U.S. Patent No. 5,953,263 (issued Sept. 14, 1999) ("the '263 patent"), claims a latency invention which involves the use of a programmable register on the DRAM chip to store a value representative of a time delay. The latency invention makes the DRAM response time more predictable because the CPU knows precisely when it will receive data from the DRAM in response to a transaction request, thereby allowing the system to plan for transfers and improving overall traffic flow over the bus.[3] Claims 1-5, 14,

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[2] All the patents in suit, and all the patents springing from the 1990 '898 application, contain the same specification. For each of citation, *all references to the specification* will be to the '918 patent.

[3] Claim 1 of the '263 patent is representative of this invention:

> 1. A synchronous semiconductor memory device having at least one memory section which includes a plurality of memory cells, the memory device comprises:
>
> a programmable register to store a value which is representative of a delay time after which the memory device responds to a read request.

16-19, 21, 23-25, 27-28, 30 and 32-33 of the '263 patent are at issue in this action.

Secondly, in U.S. Patent No. 5,954,804 (issued Sept. 21, 1999) ("the '804 patent"), Rambus claims a delayed lock loop (DLL) on a DRAM chip, which allows precise timing of the output of data. In essence, the DLL allows the DRAM chip to collect the data from the memory cells and then paces the release of that information over the bus. The DLL becomes useful when operating the DRAM at high rates of speed.[4] Claim 26 of the '804 patent is the only claim involving this invention at issue in this action.

The third patent, U.S. Patent No. 6,034,918 (issued Mar. 7, 2000) ("the '918 patent"), covers the variable block size invention, which involves the use of circuitry to allow for the output of variable-sized blocks of data over the bus in response to a transaction request. The additional circuitry allows a user, such as a CPU, to select differing sizes or blocks of data,

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[4] Claim 26 of the '804 patent describes DLL in combination with the latency invention:

> 26. An integrated circuit device having at least one memory section which includes a plurality of memory cells, wherein the integrated circuit device outputs data on an external bus synchronously with respect to first and second external clock signals, the integrated circuit device comprises:
>
> a first internal register to store a value which is representative of a number of clock cycles to transpire before the integrated circuit device responds to a read request;
>
> delay locked loop circuitry to generate an internal clock signal using the first and second external clock signals; and
>
> interface circuitry, coupled to the external bus to receive a read request, the interface circuitry includes a plurality of output drivers, coupled to the external bus, to output data on the external bus in response to the internal clock signal, synchronously with respect to the first and second external clock signals and in accordance with the value stored in the fist internal register.

instead of a single piece of data.[5] Claims 1-2, 6, 8-9, 13, 15-20, 24-25, 29-31, 33 and 34 of the '918 patent are at issue in this action.

Lastly, U.S. Patent No. 6,032,214 (issued Feb. 29, 2000) ("the '214 patent") claims double data rate ("DDR") as the invention. In general, memory devices send and receive information according to a clock contained within the computer system. Clocks are a common, but important, feature of all computer systems. Before the DDR invention, information was transferred only on the "tick" of the clock. The memory device using that type of transfer regulator is called a Synchronous DRAM, or "SDRAM." The DDR invention allows information from the SDRAM to be sent out on both the "tick" and the "tock" (or the rising and falling edges) of the computer's internal clock, thereby doubling the data output of the SDRAM for a given clock rate.[6] Claims 1-2, 4, 6, 9-11, 14-16, 18-19, 21, 24-26 and 29 of the '214 patent are at issue in this action.

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[5] Claim 18 of the '918 patent describes this invention as:

> 18. A method of operation of a synchronous memory device, wherein the memory device includes a plurality of memory cells, the method of operation of the memory device comprises:
>
> receiving an external clock signal;
>
> receiving first block size information from a bus controller, where the first block size information defines a first amount of data to be output by the memory device onto a bus in response to a read request;
>
> receiving a first request from the bus controller; and
>
> outputting the first amount of data corresponding to the first block size information, in response to the first read request, onto the bus synchronously with respect to the external clock signal.

[6] Claim 15 of the '214, which is representative of this invention, covers this invention in combination with the variable block size described in the '918 patent:"

> A method of operation of a synchronous memory device, where in the memory device includes a plurality of memory cells, the method comprising;

Infineon makes, uses, sells or offers to sell, and imports SDRAM devices, DDR SDRAM devices and Synchronous Graphics RAM ("SGRAM") devices, as well as products, such as computers, servers, automated teller machines, telephones and telephone systems and point of sale terminals, all of which contain SDRAM, DDR SDRAM or SGRAM devices. Rambus alleges that all of those devices and the products and modules into which they are incorporated infringe some or all of the patents in suit. Infineon denies that its products infringe any of those patents.

DISCUSSION

I. The Legal Standard

Patent infringement analysis involves two steps: ascertaining the proper construction of the patent claim and determining whether the accused method or product infringes the properly construed claim. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). A patent contains two distinct elements: "First, it contains a specification describing the invention 'in such full, clear, concise and exact terms as to enable any person skilled in the art . . . to make and use the same.' 35 U.S.C. § 112 . . . . Second, a patent includes one or more 'claims,' which 'particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his

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receiving first block size information, wherein the first block size information defines a first amount of data to be output onto a bus in response to a read request;

receiving a first read request; and

outputting the first amount of data corresponding to the first block size information, in response to the first read request, onto the bus synchronously with respect to a first and a second external clock signal wherein a first portion of the fist amount of data is output synchronously with respect to the first external clock signal and a second portion of the first amount of data is output synchronously with respect to the second external clock signal.

invention." *Markman v. Westview Instr., Inc.*, 517 U.S. 370, 373 (1996).

The construction or interpretation of a claim is a question of law. *Markman v. Westview*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff'd* 517 U.S. 370 (1996). "[I]n interpreting an asserted claim, the court should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Vitronics*, 90 F.3d at 1582 (internal citations omitted). If the intrinsic evidence is insufficient to resolve ambiguity in the meaning of claims, the court may rely upon extrinsic evidence to understand the technology and to construe the claims. *Id.* at 1584. "Extrinsic evidence is that evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles." *Id.* Extrinsic evidence, however, may no be used to contradict the claim language or the meanings established in the specification. *Id.* "Any other rule would be unfair to competitors who must be able to rely on the patent documents themselves, without consideration or expert opinion that then does not even exist, in ascertaining the scope of a patentee's rights to exclude." *Id.* (quoting *Southwall Tech. Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 987 (1995)).

In the examination of the intrinsic evidence, "there is a hierarchy of analytical tools. The actual words of the claim are the controlling focus." *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998). Thus, a court should first "look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." *Vitronics*, 90 F.3d at 1582. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999) ("The starting point for any claim construction must be the claims themselves."); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1362

(Fed. Cir. 1999) ("We begin, of course, with the language of the claims").

"The general rule is that terms in the claim are to be given their ordinary and accustomed meaning." *Id.* *See also Vitronics*, 90 F.3d at 1582. "It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998). Notwithstanding that terms in the claim and specification are presumed to carry the ordinary meaning that they would have to one of ordinary skill in the field, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." *Vitronics*, 90 F.3d at 1582. *See also Hoescht Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1578 (Fed. Cir. 1996), *cert. denied,* 519 U.S. 911 (1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning").

> That is, the ordinary and accustomed meaning of a disputed claim term is presumed to be the correct one, subject to the following. First, a different meaning clearly and deliberately set forth in the intrinsic materials—the written description or the prosecution history—will control. Second, if the ordinary and accustomed meaning of a disputed term would deprive the claim of clarity, then further reference must be made to the intrinsic—or in some cases, extrinsic—evidence to ascertain the proper meaning. In either case, a party wishing to

> alter the meaning of a clear claim term must overcome the presumption that the ordinary and accustomed meaning is the proper one, demonstrating why such an alteration is required.

K-2 Corp., 191 F.3d at 1362-63 (internal citations omitted). *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 951 (Fed. Cir. 1993) ("Although a patentee can be his own lexicographer, as we have repeatedly said, the words of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." (internal quotations omitted)). *Cf. Johnson Worldwide Assoc. Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999) (indicating that the patentee must set "forth an *explicit* definition for a claim term"). "Thus, second, it is *always necessary* to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." *Vitronics*, 90 F.3d at 1582 (emphasis added); *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1153 (Fed. Cir. 1997), *cert. denied* 522 U.S. 1109 (1998) (same). *See also Toro Co. v. White Consolidated Indus., Inc.*, 199 F.3d 1295, 1299 (Fed. Cir. 1999) ("words of ordinary usage must nonetheless be construed in the context of the patent documents").

> The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication . . . . The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis. *Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.*

Vitronics, 90 F.3d at 1582 (emphasis added). The ordinary meaning of claim terms is a "heavy presumption" to be overcome. *Johnson Worldwide*, 175 F.3d at 989.

As the third category of intrinsic evidence, "the court may also consider the prosecution history of the patent, if in evidence. This history contains the complete record of all the proceedings before the Patent and Trademark Office ("PTO"), including any express representations made by the applicant regarding the scope of the claims." *Vitronics*, 90 F.3d at 1583 (internal citations omitted). "[A]rguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent some clear indication to the contrary." *Southwall Tech.*, 54 F.3d at 1579. "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." *Id.* at 1576. "Claims cannot be construed in one way to obtain their allowance and in a different way against accused infringers." *Id.* *See Digital Biometrics*, 149 F.3d at 1344 ("The prosecution history is relevant because it may contain contemporaneous exchanges between the patent applicant and the PTO about what the claims mean").

When consideration of these three sources resolves the disputes over the asserted claim terms (as it generally should), reliance on extrinsic evidence to construe the claim is improper. *Vitronics*, 90 F.3d at 1583. This is because the claims, specification and file history comprise the public record of the patentee's claim, and to allow the public record (upon which competitors are entitled to rely when investigating the scope of the patentee's claimed invention), to be altered or changed by extrinsic evidence is to undermine the notice function of the public record. *Id.*

The preference for intrinsic evidence, however, does not preclude a court from considering or relying upon extrinsic evidence:

> *Vitronics* does not prohibit courts from examining extrinsic evidence, even when the patent document is itself clear . . . . Moreover, *Vitronics* does not set

> forth any rules regarding the admissibility of expert testimony into evidence . . . . Rather, *Vitronics* merely warned courts not to *rely* on extrinsic evidence in claim construction to contradict the meaning of claims discernible from thoughtful examination of the claims, the written description, and the prosecution history—the intrinsic evidence.

Pitney Bowes, 182 F.3d at 1308 (emphasis in original). *See also Bell & Howell Document Mngmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 706 (Fed. Cir. 1997) ("Use of expert testimony to explain an invention may be useful. But reliance on extrinsic evidence to interpret claims is proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence. . . .").

> This is especially the case with respect to technical terms, as opposed to non-technical terms in general usage or terms of art in the claim-drafting art . . . . Indeed, a patent is both a technical and a legal document. While a judge is well-equipped to interpret the legal aspects of the document, he or she must also interpret the technical aspects of the document, and indeed its overall meaning, from the vantage point of one skilled in the art.

Pitney Bowes, 182 F.3d at 1309.

Within the category of extrinsic evidence, some types of evidence are preferred over others: "prior art documents and dictionaries, . . . are more objective and reliable guides (than expert testimony]. Unlike expert testimony, these sources are accessible to the public in advance of litigation . . . . Indeed, opinion testimony on claim construction should be treated with the utmost caution, for it is no better than opinion testimony on the meaning of statutory terms." *Id.* at 1585.

These fundamental precepts inform and guide the construction of the claims at issue in this action. As mentioned

previously, there are 57 different claims being asserted under the four patents in suit and each of those claims are in dispute and therefore must be construed. However, in their claim construction briefs the parties have circumscribed that rather daunting task by identifying eight terms to be interpreted. At the *Markman* hearing, the parties agreed that (with a previously noted exception) these eight terms have the same meaning in each of the 57 asserted claims. As a result, the claim construction task in this action reduces to construing the eight disputed terms. That task is undertaken *seriatim*.

II. Claim Construction

A. "Bus"

The parties dispute the meaning of "bus" as that term is used throughout the claims of the patents in suit. Rambus argues that "bus" means any "set of signal lines (for example, wires) to which a number of devices are connected, and over which information is transferred between devices." According to Rambus, "the term "bus" is old and very common in the electrical arts" and, in the patents in suit, the term is used in its ordinary and customary sense "as a set of signal lines over which information is transferred."[7] To support the contention that this is the ordinary and customary construction of the term "bus," as used in its patents, Rambus relies not upon intrinsic evidence but upon the extrinsic evidence of the *IEEE (Institute of Electrical and Electronics Engineers) Standard Dictionary of Electrical and Electronics Terms*, Fourth Ed., *IEEE Inc.*, New York (1988), p. 116, to explain how one skilled in the art would understand the term. The IEEE Dictionary defines a bus as "a set of signal lines used by an interface system, to which a number of devices are connected, over which information is transferred between the devices." *Id.*[8]

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[7] Plaintiff Rambus Inc.'s *Markman* Brief Concerning Claim Construction, p. 13.

[8] Of course, a court cannot use an inconsistent dictionary definition to

Infineon, on the other hand, contends that "bus" actually has a specialized meaning conferred by the specification of the patents in suit, which describes and explains the bus and its use with the other inventions as the Rambus "multiplexed bus." Before the '898 application was filed in 1990, most buses generally had point-to-point interfaces wherein the CPU would communicate with different memory devices by different and separate lines. Furthermore, within each bus in the prior art, the lines would be dedicated to carrying either data, address, control or device-select information. In the new inventive Rambus bus, a single bus is multiplexed so that the bus lines carry all the address, control, data and device-select information over a single bus. In Infineon's view, the use of the term "bus" throughout the claims is limited to the new inventive bus described in the specification.

1. The Claim Language

The analysis begins at first considering the claim language.[9] Most of the 57 claims at issue use the term "a bus" or "the bus" or "an external bus." None of the claims, however, expressly define the term "bus," nor do they dispositively support either proposed definition. Rather, the claims generally speak of outputting or inputting data over a bus.

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contradict the meaning derived from the intrinsic evidence, but such definition may be of some assistance to the court in interpreting technical terms. *See Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2001) ("Although a dictionary definition may not enlarge the scope of a term when the specification and the prosecution history show that the inventor, or recognized usage in the field of the invention, have given the term a limited or specialized meaning, a dictionary is often useful to aid the court in determining the correct meaning to be ascribed to a term as it was used.")

[9] The term "bus" is used in claims 1, 2, 6, 8, 16, 18, 19, 20, 24, 33, and 14 of the '918 patent, claims 1, 2, 4, 10, 15, 16, 18, and 25 of the '214 patent, claims 2, 14, 27, and 30 of the '263 patent and claim 26 of the '804 patent.

Infineon urges the court to consider the language of claim 26 of the '918 patent as illustrative of its view of the term:

> 26. An integrated circuit device having at least one memory section which includes a plurality of memory cells, wherein the integrated circuit device *outputs data on an external bus* synchronously with respect to first and second external clock signals, the integrated circuit device comprises:
>
> . . .
>
> interface circuitry, *coupled to the external bus to receive a read request*, the interface circuitry includes a plurality of output drivers, coupled to the external bus, to output data on the external bus in response to the internal clock signal, synchronously with respect to the first and second external clock signals and in accordance with the value stored in the first internal register.

'918 patent, Claim 26 (emphasis added). Infineon posits that this claim calls for data to be output onto the bus, and a read request to be received on the *same bus*, thus supporting its conclusion that "bus" means a multiplexed bus.[10] While the language of this single claim somewhat supports Infineon's construction, the specification must be reviewed to determine how the inventors used the term "bus" and whether they intended the term to have a special meaning. *See Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000) ("One purpose for examining the specification is to determine if the patentee has limited the scope of the claims"). "[E]ven if [the claims] were clear on their face, [the court] must consult the specification to

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[10] The testimony of Infineon's expert, Mr. Joseph McAlexander also supports this conclusion. *See* Markman Hearing, Tr. Pg. 370 1. 13 to page 371, 1. 19 (explaining that claim 1 of the '918 patent clearly indicates that a read request and output data are to travel across a single bus).

determine if the patentee redefined any of those terms." *Id.* at 883.

2. The Specification

A close study of the patent specification reveals that, not only did the inventors act as their own lexicographers in defining the term "bus" to be the new inventive bus, but they also repeatedly explained how their various inventions worked in conjunction with the new bus, which they describe to be a centerpiece of the systems they claim to have invented.

The specification clearly and unambiguously describes the bus of the invention to be the inventive multiplexed bus. In the "Summary of Invention" the specification states:

> The present invention includes a memory subsystem comprising at least two semiconductor devices, including at least one memory device, connected in parallel to a bus *where the bus includes a plurality of bus lines for carrying substantially all address, data and control information needed by said memory devices*, where the control information includes device-select information and the bus has substantially fewer bus lines than the number of bits in a single address, and the bus carries device-select information without the need for separate device-select lines connected directly to individual devices.

'918 patent, col. 3, 11. 50-60 (emphasis added). And again, later in the same section, the specification states, "In this system of this invention, DRAMs and other devices *receive address and control information over the bus and transmit or receive requested data over the same bus*. Each memory device contains only a single bus interface with no other signal pins." '918 patent, col. 4, lines 9-13 (emphasis added). *See also* '918 patent col. 3, 1. 61 through col. 4 1. 1. (the DRAM "is modified to use a wholly bus-based interface rather than the prior art

combination of point-of-point and bus-based wiring used with conventional versions of these devices. The new bus includes clock signals, power and multiplexed address, data and control signals").

Throughout the "Detailed Description," the specification repeatedly explains the use of the new multiplexed bus:

> The present invention is designed to provide *a high speed, multiplexed bus* for communication between processing devices and memory devices and to provide devices adapted for use in the bus system.
>
> * * *
>
> The bus consists of a relatively small number of lines connected in parallel to each device on the bus. The bus carriers substantially all address, data and control information needed by devices for communication with other devices on the bus. In many systems using the present invention, *the bus carries almost every signal between every device in the entire system. There is no need for separate device-select lines since device-select information for each device on the bus is carried over the bus. There is no need for separate address and data lines because address and data information can be sent over the same lines.*
>
> * * *
>
> Virtually all the signals needed by the computer system can be sent over the bus.

'918 patent, col. 5, 11. 29-45 (emphasis added). The inescapable lesson that emerges from comparing the claims of the patents with the inventors' fulsome textual description of the invention is that the inventions include a new bus and new devices that work with the inventive bus, all to the inventor's stated purpose, which is "*to provide* a *high speed multiplexed*

bus for communication between processing devices and memory devices *and to provide devices adapted for use in the bus system.*" '918 Patent, col. 5, 11. 29-33 (emphasis added).

Additionally, not only does the specification define "bus" to be a multiplexed bus, but it also sets a background for explaining how the inventive multiplexed bus works with various other features of Rambus' inventions. Thus, the explanation of the inventions also supports the conclusion that the term "bus" means the multiplexed bus. For example, every embodiment described in the specification involves the use of a multiplexed bus.[11] Not once do the patents indicate that any of the inventions can, or should be, used with the prior art dedicated bus architecture.

This understanding is confirmed by the testimony of Mr. Joseph McAlexander, Infineon's expert, who explains that the patents "describe several bus architectures. But in every instance when they describe the bus of the invention it is always a multiplexed address, data and control bus." Markman Hearing, Tr. p. 360, 1. 25 to p. 361, 1. 4. Rambus' expert did not refute this conclusion.

In *Toro Co. v. White Consolidated Indus., Inc.*, 199 F.3d 1295 (Fed. Cir. 1999), the Federal Circuit found it significant that the disputed patent contained only one embodiment of the

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[11] *See e.g.*, '918 patent, col. 4, 11. 1-4 ("In a preferred implementation, 8 bus data lines and an AddressValid bus line carry *address, data and control information* for memory addresses up to 40 bits wide.") (emphasis added); '918 patent, col. 5, 11. 59-64 ("In the preferred implementation, memory devices are provided that have *no connections other than the bus connections described herein* and CPUs are provided that use *the bus of this invention* as the principal, if not exclusive, connection to memory and to other devices on the bus.") (emphasis added); '918 patent, col. 8, 11. 17-25 ("The preferred bus architecture of this invention comprises 11 signals: BusData [0:7]; AddrValid; Clk1 and Clk2; plus an input reference level and power and ground lines connected in parallel to each device . . . . The bus lines for BusData [0:7] signals form a byte-wide, multiplexed data/address/control bus").

invention. On the issue of whether a "ring" described in the patent must be attached to the "cover," the court noted that:

> The specification and drawings show the restriction ring as 'part of' and permanently attached to the cover. No other structure is illustrated or described . . . .
>
> . . . This is not simply the preferred embodiment; *it is the only embodiment* . . . .
>
> . . . Nowhere in the specification, including its twenty-one drawings, is the cover shown without the restriction ring attached to it.

Id. at 1301. *See also O.I. Corp. v. Tekmar Co., Inc.*, 115 F.3d 1576, 1581 (Fed. Cir. 1997) (rejecting patentee's argument that the invention could have smooth or cylindrical walls when "[a]ll of the 'passage' structures contemplated by the written description are thus either non-smooth or conical."); *General Amer. Transp. Corp. v. Cryo-Tran, Inc.*, 93 F.3d 766, 770 (Fed. Cir. 1996), *cert. denied,* 520 U.S. 1155 (1997) (the disputed clam construction was "not just the preferred embodiment of the intention; it is the *only* one described. Nothing in the claim language, specification, or drawings suggests that any of the (limitations) may be eliminated . . .") (emphasis in original). Likewise, it is significant here that Rambus does not list a single example of how any of the new inventions would work with any type of bus other than a multiplexed bus.[12]

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[12] The failure of the specification to describe any other kinds of bus in connection with the invention distinguishes the principal decision upon which Rambus relies, *Johnson Worldwide Assoc., Inc. v. Zebco Corp.*, 173 F.3d 985 (Fed. Cir. 1999). In *Johnson Worldwide*, the Federal Circuit placed great emphasis upon the fact that the disputed claims did not *require* the narrower construction. 175 F.3d at 991. The *Johnson Worldwide* opinion distinguished *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456 (Fed. Cir. 1998) (which adopted the narrower claim construction) because the written description in *Laitram* made clear that the asserted claims will bear *only one* interpretation. In *Johnson Worldwide*, there was

The Federal Circuit's holding in *Wang Labs., Inc. v. America Online, Inc.*, 197 F.3d 1377 (Fed. Cir. 1999) is instructive as well. In *Wang*, the court considered whether the ordinary and accustomed meaning of the term "frame" could be overridden by the inventor's explanation in the specification:

> The parties agreed before the district court that the term "frame" can in general usage be applied to bit-mapped display systems as well as to character-based systems . . . . The disagreement was as to whether the term "frame" in the '669 claims embraced this general usage, or whether the term would be understood by persons of skill in this field as limited to the character-based systems described in the '669 patent.

Wang, 197 F.3d at 1381. As is true here, the only system described and enabled in the specification and drawings in *Wang* used the narrower, specific arrangement of the character-based system. *Id.* at 1382. The *only* time that the patent mentioned non-character-based systems was in the "Background of Invention" section. *Id.* The Federal Circuit agreed with the district court's conclusion that those references were merely acknowledgments of the state of the prior art, not an enlargement of the patent's invention; and that a person skilled in the field of art would not have understood that those references were included in the applicant's invention. *Id.*

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no such unambiguous language in the claim; "nothing suggests that 'heading" is *required* to be the heading of a trolling motor." *Johnson Worldwide*, 175 F.3d at 991.

The facts of *Johnson Worldwide* are distinguishable from the Rambus patents here. The *Johnson Worldwide* court noted that the "many uses of the term throughout the . . . patent are consistent with a broader definition" and that the "[v]aried use of the term in the written description demonstrates the breadth of the term rather than providing a limited definition." *Id.* at 991. Thus, the dual usage of the term did not create "a special and particular definition." *Id.* Here, there are not varied uses of the term 'bus," only a single multiplexed bus.

Similarly, Rambus is limited to the description set forth in the specification, which is only a description of the multiplexed bus.

In an effort to distance the claims from the specification, Rambus argues that one skilled in the art would recognize that any kind of bus could be used with the many inventions of the specification, not just the new multiplexed bus. The Federal Circuit has rejected this exact argument, which attempts to escape the language of the specification. *See Watts*, 232 F.3d at 883 (inventor's arguments that "one of ordinary skill would be aware of a myriad ways to effect a sealing connection . . . may be true, [but] it does not overcome the fact that the specification specifies that the invention uses misaligned taper angles"). The fact that the inventions might conceivably be used with any kind of bus does not overcome the oft-repeated assertions in the specification which describe, and even tout, the new Rambus inventive bus while demonstrating that the inventions are to be used with the multiplexed bus.

Rambus next argues that Infineon is trying to improperly limit the scope of the claim to the limitations described in the preferred embodiment. *See Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 973 (Fed. Cir. 1999) ("The general rule, of course, is that the claims of a patent are not limited to the preferred embodiment, unless by their own language."); *CVI/Beta Ventures*, 112 F.3d at 1158 ("as a general matter, the claims of a patent are not limited by preferred embodiments"). The specification, however, clearly distinguishes between the "invention" of the multiplexed bus and "the preferred embodiment" of the bus. The patent often describes the broader invention of a bus multiplexed for address, data and control information. This description is then followed by a narrower description of the 'preferred embodiment' that is an implementation of the multiplexed bus.

For example, the patent states:

> The *new bus* includes clock signals, power and multiplexed address, data and control signals. In a *preferred implementation*, 8 bus data lines and an AddressValid bus line carry address, data and control information for memory addresses up to 40 bits wide. Persons skilled in the art will recognize that 16 bus data lines or other numbers of bus data lines can be used to implement the teaching of the invention.

'918 patent, col. 3, l. 67 through col. 4, l. 7. (emphasis added). The new multiplexed bus is the broadly defined invention and the preferred embodiment has certain characteristics such as 8 or 16 multiplexed lines, an AddressValid line, and addresses of up to 40 bits. Numerous references in the specification highlight these differences.[13] Usually, the preferred embodiments described in the specification give a technical example of how the overall invention works, thus helping to explain the claim language. "Although claims are not necessarily restricted in scope to what is shown in a preferred embodiment, neither are the specifics of the preferred embodiment irrelevant to the correct meaning of claim limitations." *Phonometrics, Inc. v. Northern Telecom, Inc.*, 133

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[13] *See e.g.*, '918 patent, col. 5, 11. 37-50 ("The bus carries substantially all address, data, and control information needed by devices for communication with other devices on the bus . . . . Using the organization described herein, very large addresses (40 bytes) can be sent over a small implementation)."); '918 patent col. 14, 11. 49-67 ("In the *bus-based system* of this invention" a master can use the device ID to access a specific device "including the address and control registers. *In the preferred embodiment*, one master is assigned to carry out the entire system configuration process." (emphasis added); '918 patent. Col. 16., 11, 12-21 ("The *bus architecture* of this invention can include more than one master device. The reset of initialization sequence should also include a determination of whether there are multiple masters on the bus, and if so to assign unique master ID numbers to each. Persons skilled in the art will recognize that there are many ways of doing this. *For instance*, the master could poll each device to determine what kind of device it is . . . .") (emphasis added).

F.3d 1459, 1466 (Fed. Cir. 1998). Where, as here, the several embodiments described in the specification each involves only a multiplexed bus, that weighs heavily in construing the term bus to mean a multiplexed bus. *See Wang*, 197 F.3d at 1383.

Finally, it is significant that the specification only mentions the generic (or "dedicated") bus architecture in the "Comparison of Prior Art" section.[14] In these references to "bus," however, the inventors are distinguishing their new inventive bus from the prior art. The inventors explain that "[n]one of the buses described in patents or other literature use only bused connections. All contain some point-to-point connections on the backplane." '918 Patent, col. 2, l. 67 to col. 3, l. 3. Thus, it does not help Rambus to point out, as it does, that this text of the comparison uses the same term ("bus") to describe a completely different architecture from the "new" bus which, according to Rambus, means that the term "bus" must necessarily encompass any set of information transfer lines, including those cited as prior art. The "Comparison With Prior Art" section states only what the invention does not cover; and, in so doing, the specification expressly distinguishes the prior art buses from the disclosed bus of the invention. Of course, it is settled that "[c]laims are not correctly construed to cover what was expressly disclaimed." *Cutler Corp. v. A.E. Staley Mfg. Co.*, 224 F.3d 1328, 1331 (Fed. Cir. 2000) (description in specification that distinguished other types of catalysts "effected a disclaimer of the other prior art acids"). *See also Wang*, 197 F.3d at 1382 (references to "bit-mapped" protocols in "Background of Invention" were acknowledgments of the state

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[14] For example, the specification explains that the bus of an earlier patent (U.S. Patent No. 3,821,715) "multiplexes addresses and data over a 4-bit wide bus and uses point-to-point control signals to select particular RAMs or ROMs." '918 patent, col. 2 l. 13-15. The specification also explains that in the DRAM of a previous patent (U.S. Patent 4,449,207) "[t]he external interface to this DRAM is convention, with separate control, address and data connections." '919 patent, col. 2, l. 32-33.

of the art and not an enlargement of the invention described in the patent). The argument which Rambus makes based on the term "bus" as used in the discussion of prior art runs afoul of this basic precept of claim construction.

In a further effort to use the discussions of prior art to support its proposed definition of "bus," Rambus relies on *Clearstream Wastewater Sys. v. Hydo-Action, Inc.*, 206 F.3d 1440 (Fed. Cir. 2000), to argue that its inventions involve "combination claims," therefore it is entirely permissible to include both the new and the generic buses in its inventions:

> In construing the disputed claim limitations, it must be kept in mind that the claims at issue in this case are combination claims. Combination claims can consist of new combinations of old elements or combinations of new and old elements. Because old elements are part of these combination claims, claim limitations may, and often do, read on prior art.

Id. at 1445 (internal citations omitted). Further, *Clearstream* explains that:

> Clearly, the written description does point out the disadvantages of the [prior art] rigid conduit system and the advantages of the [new] flexible-hose system. However, the written description does not require that only the new flexible-hose system, but not the old, rigid conduit system, could be used in the claimed wastewater treatment plant. It is well established in patent law that a claim may consist of all old elements . . . for it may be that the combination of old elements is novel and patentable. *Similarly, it is well established that a claim may consist of all old elements and one new element, thereby being patentable.*

Id. (emphasis added).

Infineon properly agrees that combination claims can include some, or even all, prior art elements. However, Infineon also is correct in asserting that the proper framework for the current analysis is whether one of ordinary skill in the art would understand the Rambus disclosure to assert the combination theory recently embraced by Rambus. The patent specification here does not support that theory because, unlike *Clearstream*, the specification in Rambus' patents do not describe the generic prior art bus in combination with any of the claims. Indeed, the "Comparison With Prior Art" discussion is at considerable pain to dissociate the inventive bus, and its uses, from the prior art, and to establish a similar disconnect of the other inventions from the prior art. '918 Patent, col. 2, l. 7 to col. 3, l. 47.

Thus, the specification clearly demonstrates that when the inventors used the term "bus" in the claims, they were referring to the new multiplexed bus described in the specification.[15] Upon reading the patent, one skilled in the art would conclude that the patentee explicitly defined bus: "[t]he present invention includes a memory subsystem comprising at least two semiconductor devices . . . connected in parallel to a bus where the bus includes a plurality of bus lines for carrying substantially all address, data and control information needed by said memory devices." '918 patent, col. 3, 11. 50-55. Nothing in the specification - no drawing and no embodiment - indicates that the bus in the claims has the dictionary definition that Rambus now asserts.

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[15] Other than the "Comparison with Prior Art" section, the patent specification only once indicates that a bus can be anything but the multiplexed bus: "Persons skilled in the art recognize that certain devices, such as CPUs, may be connected to other signals lines and possibly to independent buses, for example a bus to an independent cache memory, in addition to the bus of this invention." '918 patent, col. 5, 11. 54-57. In this reference, the inventors clearly distinguish between the multiplexed bus of the invention and any other kind of bus to be used in the system.

3. The File History

Despite the obvious descriptions in, and implications of, the patent itself, Rambus argues that the patent history teaches that the term "bus" includes more than just the multiplexed bus. While it is doubtful that a court should look to the patent history to contradict the unambiguous meaning described in the specification, *see Multiform Dessicants*, 133 F.3d at 1478 ("[w]hen the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term"), the patent history here does not in any fashion clarify the scope of the disputed term. Rambus relies upon two statements made, and actions taken, in the prosecution of the patents stemming from the 1990 '898 application.

In June 1997, during the prosecution of the parent application[16] to the '263 patent (which is also the grandparent to the '918 patent),[17] the Patent Examiner issued a requirement for restriction under 35 U.S.C. § 121,[18] finding that this patent claimed two distinct inventions. The examiner divided the

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[16] This application eventually issued as U.S. Patent No. 5,841,580.

[17] When considering a patent's prosecution history, it is proper to look to statements made in the prosecution of related patents stemming from the same application, as is the case here. *See Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."); *Mark I Marketing Corp. v. R.R. Donnelley & Sons Co.*, 66 F.3d 285, 291 (Fed. Cir. 1995) ("Thus, the relevant prosecution history here includes not only the '659 application but also the parent '815 and grandparent '668 applications."); *Jonsson v. Stanley Works*, 903 F.2d 812, 818 (Fed. Cir. 1990) (prosecution history of parent application is relevant to understanding scope of claims issuing in a continuation-in-part application).

[18] A requirement for restriction is issued by the PTO when a patent application contains more than one distinctly claimed invention. 35 U.S.C. § 121.

claims into two groups, one group describing a plurality of conductors to be used with the multiplexed bus and the second group describing an access-time register within the memory device (the latency invention).[19] Asserting that the groups were not "connected in design, operation, or effect," the Patent Examiner required the inventors to elect to pursue only one group of claims. Rambus prosecuted the claims in Group II (the latency invention), resulting in the '580 patent.

From this action by the PTO and from the fact that the same Patent Examiner reviewed the '263 and '918 patents in suit,

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[19] The June 9, 1997 Office Action explains:

> 4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
>
> Group I. Claims 151-55, drawn to a memory device having a *plurality of conductors being multiplexed for sequentially receiving an address*, classified in Class 365, subclass 230.02.
>
> Group II. Claims 156-158, drawn to a semiconductor device having *at least one access-time register*, classified in Class 395, subclass 290.
>
> The inventions are distinct, each from the other because of the following reasons:
>
> 5. Inventions I and II are disclosed as different combinations which are not connected in design, operation or effect. These combinations are independent if it can be shown that (1) they are not disclosed as capable of use together, (2) they have different modes of operation, (3) they have different functions, or (4) they have different effects. (MPEP 806.04, MPEP 808.01). In the instant case the combinations [sic] the memory device in Group I does not require the access-time register of Group II, and the semiconductor device in Group II does not require the plurality of conductor being multiplexed to received an address as claimed in Group I.
>
> 6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for invention I is not required for invention II, restriction for examination purposes as indicated is proper.

(emphasis added).

Rambus asks the Court to make the leap in logic that the PTO must have understood that the multiplexed bus was not necessary for every other invention arising from the specification. This kind of speculation into the motivations of the patent examiner is not useful to a reviewing court or a competitor reading the patent history. "It is the *applicant's* representations during the prosecution that potentially shed light on the construction of the claims." *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1462-63 (Fed. Cir. 1998) (emphasis in original) rejecting argument that meaning court be derived from the representation of the reexamination requester). The snippet of patent history upon which Rambus relies only shows that: (a) a single Patent Examiner at one time indicated that some claims should not be lumped together, and (b) that, rather than making an affirmative response to this restriction, Rambus chose to drop the claims for the multiplexed bus and pursue the latency invention. No more can be inferred from this exchange.

Rambus also relies on a second piece of evidence contained in the file history. Specifically, in November 1995, a different Patent Examiner rejected claims pending in the grandparent to the '804 patent as being obvious in view of prior art reference, U.S. Patent No. 5,129,069 to Helm, et al. Under Rambus' view of the file history, the Patent Examiner must have equated the generic term "bus" (recited in claims 176-181 of the grandparent application) with the non-multiplexed bus contained in the Helm patent when he initially rejected the claims. Nevertheless, this same Patent Examiner allowed claim 26 of the '804 patent (which contains a reference to an external bus) to issue without requiring that the term "bus" be limited to a multiplexed bus. Again, this kind of guessing as to what a Patent Examiner may have been thinking is not generally helpful to construing the claims terms because it requires both the court and the public to pour over oftentimes complex and voluminous patent histories, speculate as to the motivation

behind an office action, and then follow the patents in an effort to divine whether that same Patent Examiner may have had reason to construe another claim in the same manner. This invitation to haphazard guesswork certainly cannot be considered sufficiently reliable to trump the clear language of the specification. *See Vitronics*, 90 F.3d at 1582 ("Usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed term").

Moreover, the standard for construing claims in the patent application process is far different than the standard for construing claims in a litigation context. Patent examiners construe claims under a broader standard than that used by a court in undertaking claim construction. The Federal Circuit has held that "[i]t would be inconsistent with the role assigned to the PTO in issuing a patent to require it to interpret claims in the same manner as judges who, post-issuance, operate under the assumption that the patent is valid." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). In the posture of a claim construction during litigation, if the intrinsic evidence is ambiguous, "another claim construction canon comes into play. Because the applicant has the burden to 'particularly point[] out and distinctly claim[] the subject matter which the application regards as his invention' 35 U.S.C. § 112, ¶ 2 (1994), if the claim is susceptible to a broader and a narrower meaning, and the narrower one is clearly supported by the intrinsic evidence while the broader one raises questions of enablement under § 112, ¶ 1, we will adopt the narrower of the two." *Digital Biometrics*, 149 F.3d at 1344. *See also Athletic Alternatives, Inc. v. Prince Mfg. Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996) ("Were we to allow AAI successful to assert the broader of the two senses of 'between' against Prince, we would undermine the fair notice function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can exclude others temporarily.") Therefore, even if one were to conclude that the patent history casts doubt on the

clear meaning of the specification (which it does not), Rambus should be limited to the embodiment and description of a multiplexed bus set forth in the specification because it is the narrower of the two constructions.

The simple fact here is that reference to the file history does not contradict the clarity given by the specification. What Rambus has done is fixate upon two isolated events in the file history and, without connecting them to the issued patents, urges the Court to ascribe significance to the events by divining what an examiner must have meant by directing a certain action. That kind of sophistry is not among the tools available for claim construction under the carefully defined protocol established for that task by the Federal Circuit.

4. Claim Differentiation

Rambus relies on the doctrine of claim differentiation to support its contention that "bus" means only a "generic" bus. The doctrine presumes "a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." *Toro Co.*, 199 F.3d at 1302 (Fed. Cir. 1999) (quoting *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). Rambus highlights the claims contained in Rambus U.S. Patent No. 5,983,320 (the '320 patent),[20] in which the independent claims of the '320 patent cover the concept of the "new" multiplexed bus. Each claim contains qualifying language to

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[20] The '320 patent is a "sister" or "brother" patent to the '804 patent. Rambus bases the notion of cross-patent claim differentiation on footnote 2 of *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1460 n.2 (1998). Because the argument of claim differentiation fails for other reasons, it is assumed, without deciding, that this is a proper use of related patents and their prosecutions.

limit the bus to one that carries multiplexed address, data and control information over the same bus. For example, claim 7 of that patent claims a method for programming memory having a bus, where the bus "compris[es] a group of general purpose signal lines carrying substantially all of the time-division multiplexed address, data and control information for a memory transaction, wherein the address information is indicative of a range of addresses for a corresponding one of the individually addressable discrete memory sections of the memory device . . . ."[21] Therefore, Rambus argues that, when it wanted to limit the term "bus" to a bus that carries multiplexed information, it knew how to do so.

This argument ins unavailing because it too contradicts the clear meaning of the specification. "The doctrine of claim differentiation cannot broaden claims beyond the scope that is supported by the specification." *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 541 (Fed. Cir. 1998). *See also Multiform Desiccants*, 133 F.3d at 1480 (same). "Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history." *O.I. Corp. v. Tekmar Co., Inc.*, 115 F.3d 1576, 1582 (Fed. Cir. 1997) (concluding "that the description provides a clear meaning for the language of the claim in this case and that it trumps the doctrine of claim differentiation"). *See Toro Co.*, 199 F.3d at 1302 (claim differentiation "does not override clear statements of scope in the specification and the prosecution history"). "The presumption that separate claims have different

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[21] According to Rambus, other Rambus patents include similar limiting language: U.S. Patent No. 5,995,443, Claim 33 ("the bus further includes a plurality of conductors terminated by an impedance to a power source") and U.S. Patent No. 6,032,215, Claims 33 and 37 (same) and Claim 38 ("the bus further includes a plurality of conductors wherein each conductor is terminated at an end by a resistor to a power terminal.")

scope 'is a guide, not a rigid rule.'" *ATD Corp.*, 159 F.3d at 541 (quoting *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 404 (1967)). Having determined that the written specification limits the term "bus" to a multiplexed bus, it would be impermissible to allow Rambus to rely upon claim differentiation (citing to *other* patents) to broaden the meaning of the term.[22]

5. The Extrinsic Evidence

A review of the intrinsic evidence clearly demonstrates that when the term "bus" is used in the claims, it means the new inventive Rambus multiplexed bus. "Because the intrinsic record is clear, [the court] do[es] not give weight to an inconsistent dictionary definition," *Digital Biometrics*, 149 F.3d at 1346, as offered by Rambus.

A reading of the entire specification, without parsing it into individual quotes, unmistakably conveys that one of the primary benefits of every invention claimed in the patents in suit, and described in the specification, is to increase the speed of

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[22] Along these same lines, Rambus argues that the claims of the original '898 application specifically claim a multiplexed bus, therefore the reasoning behind claim differentiation would apply to give "bus" a generic meaning within the specification because the original claims are part of the specification. *See In re Dossel*, 115 F.3d 942, 945 (Fed. Cir. 1997) ("The statute thus makes clear that under current law the specification of a patent consists of, and contains, both a written description of the invention and the claims."); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 938 (Fed. Cir. 1990) ("The original claims as filed are part of the patent specification.") However, *Dossel* explains that "[m]odern usage . . . does not always conform to that statutory structure. For example, when discussing the process of *claim construction*, it is not uncommon for the process to be described as requiring an examination of the *claims*, the *specification*, and *the prosecution history*, treating them as *distinct entities*." 115 F.3d at 945. To the extent that the claims of the original application (which never issued), indicates that the inventors distinguished between the new multiplexed bus and a generic bus, this difference does not trump the clear descriptions in and implication of the written description.

operation of the memory device. High speed access is the crown jewel of the specification and to that end, the multiplexed bus, in combination with the other inventions, increases the transfer speeds and decreases the amount of space occupied by the transfer lines. One skilled in the art reading the specification would certainly conclude that the "bus" meant to be used with the inventions is the new, inventive, high-speed, multiplexed bus. This conclusion is supported by the testimony of Joseph McAlexander, an expert who is experience in the art and whose explanation for reaching that conclusion is highly credible because it is fully consonant with the specification and the claim language as explicated by the specification.[23] Mr. McAlexander's testimony is consistent with, and complimentary of, the intrinsic evidence.[24] On the other hand, the testimony of Rambus' expert, Dr. William Huber, is at odds with the intrinsic evidence and depends on a dictionary definition (other extrinsic evidence) that is not consistent with the many descriptions given by the inventors in the specification.

6. Construction

For the foregoing reasons, the term "bus" means a multiplexed set of signal lines used to transmit address, data and control information.

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[23] *See* Markman Hearing, Tr. p. 379, 1.20 to p. 380, 1.3 (Mr. McAlexander states, "Because the patent very strongly distinguishes numerous times the multiplex bus of the invention from the prior art, and states specifically in numbers of places, that the bus architecture of this new bus design is essential for the type of high speed activity that is required across the bus, and it distinguishes from the prior art because the prior art is stated not to be able to give that high speed type of transaction.").

[24] Other portions of Mr. McAlexander's testimony generally support this construction. *See* Markman Hearing, Tr. pg. 361, 11.14-24; pg. 364, 1.22 to pg. 365, 1.22; pg. 367, 1.17 to pg. 368, 1.13; pg 371, 11.3-19.

B. "Block Size Information"

In Rambus' invention, the user can specify the amount of data to be transferred over the bus during a bus transaction. This value is represented by the term "block size." The parties differ as to exactly how this value is to be measured. Rambus argues that "block size" is "the number of sequential data bits to be read from or written to the memory." In essence, Rambus reads block size to be a function of the number of sequential transactions on a bus necessary to respond to the transaction request. Infineon posits that "block size" "specifies the total amount of data that is to be transferred on the bus in response to a transaction request." In other words, Infineon measures block size as a function of size or the amount of data to be transferred over the bus.

1. The Claim Language

The term "block size" occurs numerous times throughout the claims of the '918 patent and the '214 patent.[25] Most of the claims indicate that block size information defines the amount of data to be output or input by the memory device.[26] Indeed, there is nothing in the text of any claim which employs the term "block size" to indicate that "block size" means anything other than the amount of data to be transferred on the bus in response to some sort of transaction request. Thus, from reading the

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[25] *See* claims 1, 2, 6, 9, 13, 15, 16, 18, 19, 20, 24, 29, 30, 31, 33, and 34 of the '918 patent and claims 1, 4, 6, 9, 10, 15, 16, 18, 21, and 25 of the '214 patent.

[26] *See e.g.* '918 patent, claim 1 ("first block size information defines a first amount of data to be output by the memory device. . . ."); '918 patent, claim 6 ("the memory device outputs the first amount of data corresponding to the first block size information. . . ."); '918 patent claim 13 ("the first block size information is a binary representation of the amount of data to be output after receipt of the first read request."); '214 patent, claim 1 ("first block size information defines a first amount of data to be output onto a bus. . . ."); '214 patent, claim 6 ("first block size information is a binary code indicative of the first amount of data to be output in response to the read request").

language of the claims, one skilled in the art would conclude that block size information is an instruction indicating the amount of data to be output (or input) by the memory device.

Rambus nonetheless urges that block size means "the number of sequential data bits to be read from or written to the memory" (presumably in response to a transaction request). Rambus does not identify any aspect of the claim language that would support its preferred definition. Additionally, it is worth noting that noting the claim language has been cited, or for that matter argued, as supporting the temporal or order requirements which would inhere in a sequential-based definition.

2. The Specification

In general terms, the specification explains that "[o]ne object of the present invention is to use a new bus interface built into semiconductor devices to support high-speed access to *large blocks of data* from a single memory device by an external user of the data, such as a microprocessor, in an efficient and cost-effective manner." '918 patent, col. 3, lines 21-25 (emphasis added). *See also* '918 patent, col. 4, lines 15-16 ("The bus supports large data block transfers . . .").

In discussing the preferred method of Device Address Mapping and the address registers therein employed, the specification explains that:

> The address registers can include a single pointer, usually pointing to a *block of known size*, a pointer and a fixed or variable *block size value* or two pointers, one pointing to the beginning and one to the end (or to the "top" and "bottom" of each memory block).

'918 Patent, col. 7, 11. 36-41. This text and that which follows it clearly bespeaks volume or amount as the measure of a block, not sequence or time.

The several other references to block size in the specification also teach that the term relates to *amount* of data not the order and timing of bits of data in a particular sequence.[27]

3. The Extrinsic Evidence

The construction offered by Rambus purports to be grounded in a table in column 11 of the specification. The table is in a section which refers to the preferred embodiment detailed in Figure 4 of the patent.[28] The specification states:

> BlockSize [0:3] specifies the size of the data block transfer. If BlockSize[0] is 0, the remaining bits are the binary representation of the block size (0-7). If BlockSize[0] is 1, then the remaining bits give the block size as a binary power of 2, from 8 to 1024. A zero-length block can be interpreted as a special command, for example, to refresh a DRAM without returning any data, or to change the DRAM from page mode to normal access mode or vice-versa.

Block Size [0:2]	Number of Bytes in Block
0-7	0-7 respectively
6	8
9	16
10	32
11	64
12	128
13	256
14	512
15	1024

> Persons skilled in the art will recognize that other blocksize encoding schemes or values can be used.

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[27] '918 Patent, col. 11, ll. 1-5, ll. 41-48, col. 16, ll. 26-35, ll. 44-47; col. 17, ll. 1-2; col. 20, ll. 18-22.

[28] Figure 4 is replicated later in the Memorandum Opinion at II.C.2.

'918 patent, col. 11, 11. 41-63.[29]

Rambus uses Table 11, as interpreted by its expert, Dr. Huber, as the basis for its construction that block size information is the number of sequential transfers necessary to carry the desired information over the bus line. The table is but one of many encoding schemes and does not purport to define or explain the meaning of block size generally. According to Dr. Huber, the block size indicated in the chart corresponds to the number of sequential transfers necessary to output the data onto the preferred embodiment 8-line bus. That is certainly not apparent from the patent document. Furthermore, during the *Markman* hearing, Dr. Huber connected almost all of his opinions, not to the patent specification, but rather to a prepared animation demonstrating how block size should be measured as sequential transfers of data. The reason for such reliance seems quite clear—there simply is no support in the patent document. Also, that view is flatly contradicted by Infineon's expert who explained that block size contains information specifying the total amount of data that is to be transferred. *See* Markman Hearing, Tr. pg. 442, 11.11-19. Mr. McAlexander has testified that "[t]he person of ordinary skill in the art would come to [the conclusion] that block size . . . means amount, and in just a plain, simple ordinary meaning of size is a[n] amount, it's not when or how." Markman Hearing, Tr. pg. 439, 11. 11-16 (testimony of Mr. McAlexander).

4. Construction

Infineon's construction is grounded in the specification and the claim language because both sources of information rather clearly reflect that block size is an amount of data, not the order in which it is delivered. There is nothing in the specification to support Rambus' somewhat contorted definition of block size.

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[29] During the *Markman* hearing, the parties agreed that the "6" contained in the second row of the chart is incorrect due to an apparent copying error. This number should be an "8."

It simply defies reason (and the specification) to conceive of size as a measure of time.

Moreover, the construction urged by Rambus utterly ignores the clear language of the claim that block size is associated with a transaction request. (*See e.g.*, '918 Patent, Claim 1-7 and all other claims (8 through 38) dependent upon Claim 1-7). Infineon's definition encompasses this connection and, for that additional reason, it is the definition that is necessitated by the claim language and by the specification. Thus, "block size" is construed to mean "information that specifies the total amount of data that is to be transferred on the bus in response to a transaction request."

C. "Read Request," "Write Request," and "Transaction Request"

The next three disputed terms are closely related, and, as the parties agree, it is appropriate to accord joint consideration. The purpose of memory devices (*i.e.*, a DRAM) is to store data for later use. To this end, when a controller (or master) accesses the memory device to either store or retrieve data, it must send that device an instruction indicating what type of transaction is to be performed. At the most basic level, a read request is an instruction to the memory device to read data from the memory cells; a write request instructs the memory device to write data to the memory cells; and a transaction request instructs the memory device to perform some function, which could include reading or writing data. The controversy surrounding these terms involves whether these requests must contain not only the instruction of what action to perform (found in an "AccessType" field), but also must include address information indicating where in the memory cells the data should be read or written. Rambus contends that read, write and transaction requests contain only the instruction of what action to perform. For example, it proposes that read request be defined as "an instruction to read data from specified memory cell(s) of the memory. This instruction is specified by a binary

code[30] provided to the memory device during a single clock cycle and received by the memory device in response to a clock transition."

Infineon, on the other hand, argues that such requests must contain both the instruction of what kind of action to perform and address information indicated where that action is to occur on the memory device. Address information, containing both row and column identifiers, tells the memory device where the desired data is located (or to be located) within the plurality of the memory cells. In Infineon's construction, a " 'read request' means 'a series of bits transmitted over the bus that contain multiplexed address and control information needed to request a read of data from a memory device.'" In addition to objecting to the failure of Rambus' definition to include address information, Infineon disagrees with the limitations inherent in Rambus' definition, specifically the requirements that the request be a "binary code," that it can be no longer than "a single clock cycle" of information, and hat it must be "received in response to a clock transition." In its view, these limitations are not required by the intrinsic evidence, and in some cases are actually inconsistent with the embodiments disclosed in the specification.

1. The Claim Language

Both parties agree that the terms "read request," "write request," and "transaction requests" are not terms of art and were used for the first time in the 1990 '898 application. Therefore, there is no ordinary and accustomed meaning for these terms. Some information, however, can be gleaned from the language of the claims.[31]

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[30] Binary code, a term not in dispute here, is "a code that makes use of members of an alphabet containing exactly two characters, usually 0 and 1." *IEEE Standard Dictionary of Electrical and Electronics Terms,* 4th Ed., IEEE, Inc. NY, 4th Ed., Pg. 95.

[31] The term "read request" occurs in claims 1, 6, 8, 13, 18, 19, 24, 29, and

Infineon uses the language of claim 1 of the '918 patent, claim 1 of the '214 patent, claim 1 of the '263 patent and claim 26 of the '804 patent to demonstrate that all claims require that a device *respond* to 'read request':

> 1. A method of controlling a synchronous memory device, wherein the memory device, includes a plurality of memory cells, the method of controlling the memory device comprises:
>
> providing first block size information to the memory device, wherein the first block size information defines a first amount of *data to be output by the memory device onto a bus in response to a read request.* . . .

'918 patent, claim 1 (emphasis added).

> 1. A method of operating a synchronous memory device, wherein the memory device includes a plurality of memory cells, the method of comprising:
>
> providing first block size information to the memory device, wherein the first block size information defines *a first amount of data to be output onto a bus in response to a read request* . . . .

'214 patent, claim 1 (emphasis added).

> 1. A synchronous semiconductor memory device having at least one memory section which

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34 of the '918 patent; claims 1, 2, 6, 14, 15, 16, 18, and 29 of the '214 patent; claims 1, 2, 14, 24, 15, 27, and 30 of the '263 patent; and claim 26 of the '804 patent.

The term "write request" occurs in claims 2 and 20 of the '918 patent.

The term "transaction request" occurs in Claims 18 and 25 of the '263 patent.

> includes a plurality of memory cells, the memory device comprises:
>
> a programmable register to store a value which is representative of a delay time *after which the memory device responds to a read request.*

'263 patent, claim 1 (emphasis added).

> 26. An integrated circuit device having at least one memory section which includes a plurality of memory cells, wherein the integrated circuit device outputs data on an external bus synchronously with respect to first and second external clock signals, the integrated circuit device comprises:
>
> a first internal register to store a value which is representative of a number of clock cycles to transpire *before the integrated circuit device responds to a read request* . . .

'804 patent, claim 26 (emphasis added).

The claims clearly so provide. Indeed, all but two of the disputed claims containing these terms[32] explicitly state that information is supplied "in response to" a read request, a write request or other transaction request. It is, of course, true, as Infineon contends, that, in order to "respond" to a request (*i.e.* outputting or inputting data), the desired response can only occur if the selected device is given the information necessary to generate that response. Because one of ordinary skill in the art would understand that both address and control information

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[32] Indeed, of those claims mentioning read request, write request and transaction request, only claims 14 and 29 of the '214 patent do not explicitly mention that the memory device is to respond to the read request and even those mention a read request in such a way as to indicate that the term means there what it means elsewhere (Claim 14 "before executing another read request"); (Claim 29 "after executing another read request.")

are required for the memory device to respond to a request, that request must contain more than just the binary code or "AccessType" suggested by Rambus. Given the nature of the information and the way the invention works, it seems self-evident from the claim language that a request is, as Infineon posits, a series of bits transmitted over the bus containing address and control information. This conclusion is further buttressed by the explanations of Mr. McAlexander. *See* Markman Hearing Tr. pg. 417, 11. 18-25 ("certainly the read has to have some control. It tells you what kind of transaction is being requested. If the memory is to respond to that, it must know where to respond from, what address"). Thus, the claim language, although not dispositive, strongly supports the view of read, write and transaction request taken by Infineon.

2. The Specification

Although not discussed as extensively as other terms, such as "bus," the terms here at issue are the subject of explication in the specification. For example, in the "Comparison With Prior Art" section, the inventors explain:

> Yet another *object of this invention* is to provide *a method* for *transferring address, data and control information* over a relatively narrow bus and to provide a method of bus arbitration when multiple devices seek to use the bus simultaneously.

'918 Patent, col. 3, 11. 35-39 (emphasis added). This statement of object remarks the key role of address, data and control information. And, as explained in the cited text, and above in construing the term "bus," the significance of the invention of the system is to accomplish quickly the commands necessary to initiate a request and secure a response.

Then, in the ensuing "Summary of Invention" discussion, the inventors say that "[i]n this system of the invention, *DRAMs and other devices received address and control information* over the bus and *transmit or receive requested data* over the

same bus." '918 Patent, col. 4, 11. 9-11 (emphasis added). Though not explicitly mentioning a "request," this quote lends credence to the basic notion that a memory device should receive both address and control information in order to be able to transmit or receive data.

Then, shortly thereafter, in describing a preferred implementation of the invention, the specification explains how a bus transaction is initiated "by sending a request packet (a sequence of bytes comprising address and control information)." '918 Patent, col. 6, 11. 60-63). This, too, teaches that a request (be it a read request, write request, or transaction request) includes the address and control information necessary to accomplish the request.[33]

Having established that the specification contemplates both address and control information are needed for a response, it is necessary to ascertain whether a read request should contain *both* categories of information. The definition which Rambus presses proposes that a transaction request would consist only of the "AccessType" found in the top row[34] of Figure 4, the preferred embodiment.

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[33] Again, this conclusion is supported by the expert testimony of Infineon's Mr. McAlexander. *See* Trans. pg. 417, lines 20-22 ("I found the control and address information were required in every instance it was addressed in the specification").

[34] As shown in Figure 4, the rows represent time or clock cycles.

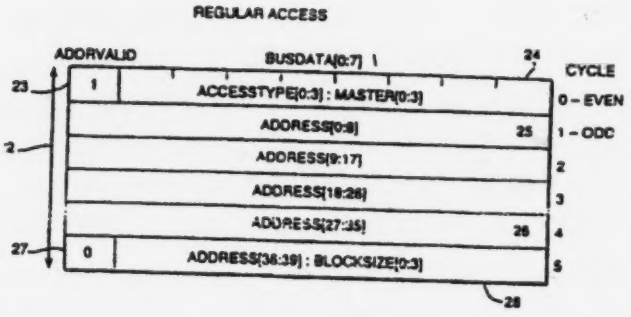

FIG 4

In the preferred embodiment, the AccessType instruction, which contains the control information specifying the type of request, would be a binary code 4-bits wide. The specification explains:

> The AccessType filed [*sic*: field] specifies whether the requested operation is a read or write . . . . In a preferred implementation, AccessType [0] is a Read/Write switch: if it is a 1, then the operation calls for a read from the slave (the slave to read the requested memory block and drive the memory contents onto the bus); if it is a 0, the operation calls for a write into the slave (the slave to read data from the bus and write it to memory).

'918 patent, col. 9, 11.47-56. Rambus would limit the terms "read request," "write request" and transaction request" to only this AccessType field. In contrast, according to Infineon's interpretation, the requests must contain both the AccessType control information and the address information indicated on the remaining rows of Figure 4. To support its definition, Infineon points to the following passage from the specification:

> In a preferred implementation of the invention, to initiate a bus transfer over the bus, a master sends out a request packet, a continuous series of bytes containing address and control information . . . .

> The device-selection function is handled using the bus data lines. AddrValid is driven, which instructs all slaves to decode the request packet address, determine whether they contain the requested address, and if they do, provide the data back to the master (in the case of a read request) or accept data from the master (in the case of a write request) in a data block transfer.

'918 patent, col. 8 1.66 through col. 9, 1. 4. The specification also explains that "[i]n some cases, a slave [memory device] may not be able to respond correctly to a request, *e.g.* for a read or write. In that situation, the slave should return an error message . . . or a retry message." '918 patent, col. 12, 11. 4-8. These references and others[35] illustrate that the memory should *respond* to the request. In order to respond, the memory device also must be given address information specifying where the data is to be read or written.

Additionally, though one must understand the technology to comprehend the import of the statement, the specification actually states that address rows are to be accessed during a request. The patent explains that the DRAM sense amps should be pre-charged and "[t]his precharging allows access to a *row* in the RAM to begin as soon as the access request for either *inputs (writes) or outputs (reads)* is received and allows the column sense amps to sense data quickly." '918 Patent, col. 10, 11. 21-24 (emphasis added). Because one skilled in the art would recognize that "row" refers to a particular location on the plurality of memory cells, it follows that address information must be conveyed in order to access that row. That address

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[35] *See e.g.* '918 patent, col. 8, 11. 48-49 ("a slave should preferable respond to a request in a specified time");' '918 patent, col. 8, 11. 24-29 ("AddrValid is used to indicate when the bus is holding a valid address request, and instructs a slave to decode the bus data as an address and, if the address is included on that slave, to handle the pending request."

information is contained in "the access request for either inputs (writes) or outputs (reads)."

Rambus definition would only indicate what type of operation to take place. *See* Markman Hearing, Tr. pg. 122, 11. 11-13 (testimony of Dr. Huber) ("We don't need the rest of the information [address information] to know that it's a read request"). The specification and the claims, however, clearly demonstrate the memory devices are not only to recognize the requested operation, but also respond to the request. Even Dr. Huber admitted that address information must be received for there to be a response. Dr. Huber took the view that this information could be conveyed at some other unspecified time. *See* Markman Hearing, Tr. pg. 141, 11. 20-22 (testimony of Dr. Huber). That approach is untenable because nowhere in the specification is it mentioned that address information should be sent at any other time than contemporaneous with the request.

Nor does the specification support the other foundational components of the narrow view of these terms expressed by Rambus. The construction urged by Rambus essentially attempts to equate the term "read request" with "AccessType," as shown in Figure 4, as the predicate for its requirement that "a read request" must be a binary code, occur in a single clock cycle, and be in response to a clock transition. The specification offers no warrant for such a limited construction, and, as Infineon points out, Rambus here is attempting artificially to limit the invention to the preferred embodiment of Figure 4, which describes a bus transaction that uses the preferred implementation of a 9-bit wide external bus. *See* '918 patent, col. 9, 11. 26-27 ("Each request packet uses all nine bits of the multiplexed data/address lines"). Because Figure 4 indicates that the AccessType is only 4-bits wide, it is possible for Rambus' proposed definition to occur in a single clock cycle. However, this requirement stems solely from Rambus' view that AccessType is a request. If a request contains both control and address information, then this would not be true.

See Markman Hearing, Tr. pg. 431, 11. 8-12 (testimony of McAlexander) ("There is a specific control set of bits called the access type that does occur as a set of bits in a particular single cycle as shown in a preferred embodiment, but all that does is establish the type.") Similarly, there is nothing in the specification to support Rambus' requirement that the transaction request be received by the memory device in response to a clock transition. *See* Markman Hearing, Tr. pg. 432, 11. 2-9 (testimony of McAlexander) (indicating that nothing in the specification supports this requirement).

Rambus contends that Infineon's construction incorrectly equates "read request" (or "write request" or "transaction request") with a request packet, arguing instead that a read request is actually a component of a request packet. For example, the specification states that "FIG. 4 shows the format of a request packet." '918 patent, col. 4, 1. 66. It also explains that, in a preferred implementation, "a master sends out a request packet, a contiguous series of bytes *containing address and control information*." '918 patent, col. 8, 11. 60-63. The criticism is superficially appealing; however, the confusion results in large part from the fact that the specification uses the term "request" and "request packet" interchangeably. For example, the inventors explain, "FIG. 5 illustrates the format of a retry message 28 which is useful for *read requests*, . . . All DRAMs and masters can easily recognize such *packet* as an invalid *request packet*, and therefore a retry message." '918 patent, col. 12, 11. 33-39. *See also* '918 patent, col. 12, 11. 49-52 ("The master sends *request packets* and keeps track of periods when the bus will be busy in response to that *packet*. The master can schedule multiple *requests* so that the corresponding data block transfers do not overlap."; '918 patent, col. 12, 11 58.61 ("Situations will arise, however, where two or more masters send a *request packet* at or about the same time and the multiple *requests* must be detected. . . .) That drafting lapse is unfortunate, but it certainly is not dispositive

because that text too must be interpreted in perspective of the whole specification.

Considering the claim language and the specification in its entirety and for the reasons explained above, the construction offered by Infineon is better supported by the patent document. Although that construction results in some overlap in the meanings of request and request packet, that overlap is inherent in the patent specification itself. Indeed, the most significant passage of the specification discussing read requests and write requests indicates that such a request is related to (if not synonymous with) a request packet: "AddrValid is driven, which instructs all slaves to decode the *packet* address determine whether they contain the requested address, and if they do, provide the data back to the master (in the case of *read request*) or accept data from the master (in the case of a *write request*) in a data block transfer." '918 Patent, col. 8, l. 66 through col. 9, l. 4 (emphasis added).

3. The File History

Those constructions derived from the claim language and specification are supported by the fact that, in the prosecution of the '804 patent, Rambus made statements to the PTO relating to the term "transaction request." In February 1999, Rambus submitted a Preliminary Amendment in U.S. Patent App. 08/798,525 (issued as the '804 patent) in which it admitted that transaction requests are not simply a single clock-cycle access-time code. In response to a rejection by the Patent Examiner, Rambus stated that a "transaction request" contains identification information:

> When the identification information *contained in the transaction request* corresponds to the identification value stored in the internal register in a particular memory device on the module, that memory device *executes the transaction request.* Memory devices on the module having

> identification values which do not correspond to the *identification information contained in the transaction request* do not execute or respond to the request.

Supplemental Preliminary Amendment, U.S. Patent App. 08/798,525, p. 12 (emphasis added). Thus, Rambus explicitly represented that a transaction request contains more than just a binary code in the AccessType field: the above passage shows that device identification information also is contained in the transaction request. While this representation does not necessarily imply that Infineon's definition is unquestionably correct, it certainly undermines the construction now urged by Rambus.

4. Claim Differentiation

Claim 15 of the '214 patent refers to a "read request" without further limitation, while dependent claim 22 recites: "The method of claim 15 wherein the first block size information and the first read request are contained in a request packet." Rambus argues that this language distinguishes a "read request" from a "request packet." As stated previously, the specification sometimes uses the terms "request" and a "request packet" interchangeably. Notwithstanding that drafting laxity, the differences in claim 15 and 22 do not refute the notion that a request contains address and control information. These claims simply add a third type of information, block size information, as a component of a request packet.

Given that the claim language clearly illustrates that a memory device is to respond to a read, write or transaction request and that Rambus has not explained how the device would respond without receiving address, data and control information, the claim language on its face supports the requirement that requests contain both address and control information. The specification, while not pellucid, also indicates that a request must contain such information so that it

can respond to the request, whether the request be packetized or not. Rambus' narrow definition is not supported by the specification, and indeed, is refuted by the file history. Therefore, it is appropriate to conclude that "read request," "write request," and "transaction request" contain both address and control information indicating what type of transaction to perform and where the data should be located on the memory device.

5. Construction

For the foregoing reasons, the term "read request" is construed to mean "a series of bits transmitted over the bus that contain multiplexed address and control information needed to request a read of data from a memory device." The term "write request" is construed to mean "a series of bits transmitted over the bus that contain multiplexed address and control information needed to request a write of data to a memory device." The term "transaction request" is construed to mean "a series of bits transmitted over the bus that contain multiplexed address and control information needed to perform a transaction over the bus with a memory device."

D. "First and Second External Clock Signals"

The parties agree that the bus of the invention carries two external clock signals[36] which pace the exchange of information over the bus and provide timing synchronization for the memory system. The dispute arises over whether the second external clock signal must contain information that is different from the timing information sent by the first clock signal.

Although referred to as a "clock" by one skilled in the art, the clock of a memory chip is actually a set of timing information derived from an oscillating reference voltage ("V_{REF}") which cycles between two voltage levels. Rambus' proposed

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[36] As has been the convention of both the patent documents and the parties, the terms "clock signal" and "clock" are used interchangeably.

definitions do not require that the two signals contain different timing information, while Infineon's proposed definitions require that the second signal contain different information from the first.

1. The Claim Language

Every asserted claim in the '214 patent (the double data rate invention) and the '804 patent (the delayed lock loop invention) contains the terms "first external clock signal" and "second external clock signal."[37] Most of the claims simply indicate that data is to be output on the bus in response to the first and second external clock signals. Three claims, however, reveal that the two clock signals can be used by the memory device to create an internal clock:

> 25. The method of claim 15 further including generating at least one internal clock signal using the first and second external clock signals wherein the first amount of data corresponding to the first block size information is output onto the bus synchronously with respect to at least one internal clock signal.

'214 patent, claim 25.

> 26. The method of claim 25 further including generating a first internal clock signal using a delay locked loop and the first and second external clock signals.

'214 patent, claim 26.

> 26. An integrated circuit device having at least one memory section which includes a plurality of memory cells, wherein the integrated circuit device outputs data on an external bus synchronously with

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[37] *See* claims 1, 2, 4, 9, 10, 11, 15, 16, 18, 24, 25, and 26 of the '214 patent and claim 26 of the '804 patent.

> respect to first and second external clock signals, the integrated circuit device comprises:
>
> . . . . .
>
> Delay locked loop circuitry to generate an internal clock signal using the first and second external clock signals . . . .

'804 patent, claim 26.

The claim language thus indicates that somehow the memory device is to use the information derived from the first and second clock signal to create in internal signal. One must consult the specification to understand how this is accomplished.

2. The Specification

In the "Background of the Invention" section, the specification relates that one "object of this invention is to provide a clocking scheme to permit high speed clock signals to be sent along the bus with minimal clock skew between devices." '918 patent, col. 3, 11. 27-29. "The two clocks together provide a synchronized high speed clock for all the devices on the bus." '918 patent, col. 8, 11. 29-30. Most significantly, in the "Clocking" subsection of the "Detailed Description," the inventors explain:

> Clocking a high speed bus accurately without introducing error due to propagation delays can be implemented by having each device monitor two bus clock signals and the[n] derive internally a device clock, the true system clock. The bus clock information can be sent on one or two lines to provide a mechanism for each bused device to generate an internal device clock with zero skew relative to all the other device clocks.

'918 patent, col. 18, l. 63 through col. 19, l. 4. This idea of clock skew can be best understood by reference to Figures 8a and 8b of the specification.

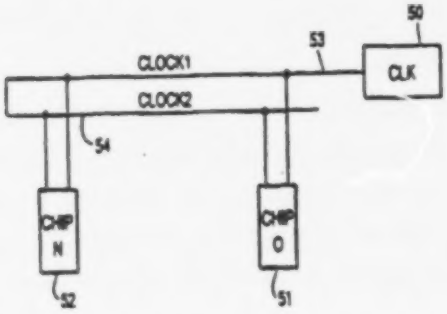

FIG. 8A

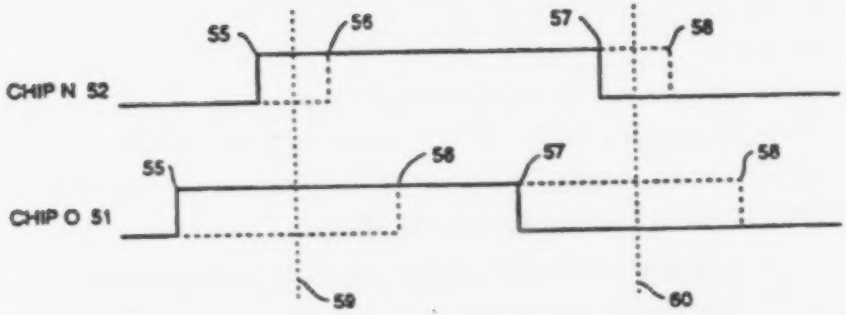

FIG. 8B

The specification clearly demonstrates how these figures represent the two clock signals:

> Referring to FIG. 8*a*, in the preferred implementation, a bus clock generator 50 at one end of the bus propagates an early bus clock signal in one direction along the bus, for example on line

53 from right to left, to the far end of the bus. The same clock signal then is passed through the direct connection shown to a second line 54, and returns as a late bus clock signal along the bus from the far end to the origin, propagating from left to right. A single bus clock line can be used if it is left unterminated at the far end of the bus, allowing the early bus clock signal to reflect back along the same line as a late bus clock signal.

FIG. 8*b* illustrates how each device 51, 52 receives each of the two bus clock signals at a different time (because of propagation delay along the wires), with constant midpoint in time between the two bus clocks along the bus. At each device 51, 52, the rising edge 55 of Clock1 53 is followed by the rising edge of 56 of Clock2 54. Similarly, the falling edge 57 of Clock1 53 is followed by the falling edge 58 of Clock2 54. This waveform relationship is observed at all other devices along the bus. Devices which are closer to the clock generator have a greater separation between Clock 1 and Clock2 relative to devices farther from the generator because of the longer time required for each clock pulse to travers the bus and return along line 54, but the midpoint in time 59, 60 between corresponding rising of falling edges is fixed because, for any given device, the length of each clock line between the far end of the bus and that device is equal. Each device must sample the two bus clocks and generate its own internal device clock at the midpoint of the two.

'918 patent, col. 19, 11. 4-32 *See also* Fig. 13 of the '918 patent (showing how the rising and falling edges of the two bus clocks can be synchronized).

In essence, this portion of the specification explains how chips N and O, which are located in different positions along the bus lines, receive the clock signals at different points in time due to their locations relative to the origin of the clock signal. By reflecting the signal along a second line, the memory system can compensate for this delay and create a second clock signal. From these two signals, chips N and O create an internal clock signal which corrects the clock skew caused by propagation delay. In order to correct the skew, the two signals must necessarily contain different information, as Rambus' expert admitted. *See* Markman Hearing, tr. pg. pp. 296-298 (testimony of Dr. Huber). Although the specification lists this clocking scheme as a preferred embodiment, it is actually the *only* embodiment of the clock in the entire specification. As with the analysis of the term "bus," it is significant that the specification limits the clock to a single embodiment. *See generally Wang*, 197 F.3d at 1380; *Toro*, 199 F.3d at 1301; *O.I. Corp.*, 115 F.3d at 1581.

3. The Extrinsic Evidence

The constructions taught by the specification are confirmed by the testimony of Mr. McAlexander who explained that to one ordinarily skilled in the art that the Rambus clock scheme allows the memory devices to sample each clock signal as it is received over the line and then averages the two signals such that every device is operating off the same clock, regardless of that device's location relative to the origin of the clock signal. Markman Hearing, Tr. pg. 457, line 2 to pg. 458, line 1 (testimony of Mr. McAlexander). Thus "the timing information and the difference between them is essential to this inventive concept of the clock design." *Id.*[38]

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[38] Mr. McAlexander's testimony also explains how the clocking scheme comes full circle to the primary objective of the invention and the use of a multiplexed bus:

> In the prior art where the address information goes down one bus

In the interpretation of these terms, Rambus once again eschews the language of the specification, choosing to rely instead on the testimony of its expert who says that one skilled in the art would recognize that the first and second external clock signal can have, but does not need to have, different timing information in each signal. Therefore, according to Rambus, it is unnecessary to tie the claim definition to the language of the specification.[39] This approach runs afoul of the principle that the patent specification must always be reviewed to see if the patentee used the terms in a manner other than their ordinary meaning. *Vitronics*, 90 F.3d at 1582. Thus, even if one accepted Rambus' contention that the ordinary and accustomed meaning of first and external clock signals would be known to one of skill in the trade, the patent specification only describes a clocking scheme which corrects clock skew by creating an internal clock based on differing external clock signals.

> and data is responded to the bus on a totally different bus—so you have a data bus that's separate and distinct from the address bus—you could send down the control [or] the address information to a chip, activate it . . . it goes in, find the data from the storage cells and immediately sends it out to the data bus which is a separate bus.
>
> In the multiplexed design, the data must share the same bus as the address information. And so the . . . controlling system must assure that at no time does address or control information reside on the bus at the same time that data . . . is coming back on the bus; otherwise, you would end up with a collision. . . .
>
> So in order to arbitrate that and to make sure that nothing is on the bus when it's not supposed to be, the whole system has to be in sync. Every system, every . . . chip, every component on the bus to be operating under the exact same timing constraints.
>
> That's why it's important and valuable . . . to use a clock design that will synchronize everything together.

Markman Hearing, Tr. pg. 465 l. 6 to pg. 466, l. 10.

[39] *See* Testimony of Dr. Huber, pg. 302, l. 25 – pg. 303 l. 2 ("I don't need to go to the patent to interpret the term. Clock signal is a well known term").

4. Construction

Based on the claim language and the specification the term "first internal clock signal" is construed to mean "a periodic signal received by the memory device from an external source to provide first timing information." The term "second internal clock signal" is construed to mean "a periodic signal received by the memory device from an external source to provide second timing information that is different from the first timing information."

E. Integrated Circuit Device

Lastly, the parties contest the meaning of "integrated circuit device" as that term is found in claim 26 of the '804 patent. Rambus contends that the term means a "circuit constructed on a single monolithic substrate, commonly called a 'chip.'" Infineon, however, argues that representations made in the prosecution of the '804 patent limit this term to "a device composed of integrated circuits that include at least an ID register and related interface and comparison circuitry."[40]

1. The Claim Language And The Specification

Neither the claim language nor the specification inform the present inquiry. Indeed, the specification mentions an integrated circuit only once.

2. The File History

The file history of this claim is the only relevant category of intrinsic evidence. During the prosecution of Claim 26 in the '804 patent, (which was at that time, U.S. Patent App. 08/798,525 or the '525 application) Rambus expressly limited its claims by adding certain restrictions in order to overcome the PTO's prior art rejections. In response to the rejections,

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[40] The parties have agreed that "integrated circuit device" is only disputed as it occurs in claim 26 of the '804 patent and not as it appears in the other patents. This is because the relevant file history limits the representations made to the PTO to only the '804 patent.

Rambus submitted new claims—including the claim that ultimately issued as claim 26 of the '804 patent. Rambus argued to the PTO that the newly submitted claims were different from prior art because they all contained a device ID register and relevant interface and comparison circuitry limitations:

> The new claims submitted in this Supplemental Preliminary Amendment have been added to more definitely and fully protect Applicants' invention. *These newly submitted claims are directed to a memory device (or an integrated circuit having memory) having (1) and internal register for strong an identification value, (2) interface circuitry to receive a request on an external bus, and (3) comparison circuitry to determine whether the identification information in the request corresponds to the identification value in the internal register*—wherein when the identification information corresponds to the identification value, the memory device responds to the request.

Supplemental Preliminary Amendment, U.S. Patent App. 08/798,525, pp. 11-12. The '804 patent issued subsequently. Thus, it appears that Rambus believed that its claims did not cover devices without a device ID register and relevant interface and comparison circuitry. To allow Rambus to broaden its claim in the face of this restriction would defeat the public notice function of the patent history. In *Hockerson-Halberstadt, Inc. v. Avia Group Intn'l., Inc.*, 222 F.3d 951 (Fed. Cir. 2000), the Federal Circuit explained:

> [The inventor's] argument therefore reduces to a request for a mulligan that would erase from the prosecution history the inventor's disavowal of a particular aspect of a claim terms' meaning. Such an argument is inimical to the public notice function provided by the prosecution history. The

> prosecution history constitutes a public record of the patentee's representations concerning the scope and meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct, such as designing around the claimed invention. . . . Were we to accept [the inventor's] position, we would undercut the public's reliance on a statement that was in the public record and upon which reasonable competitors formed their business strategies.

Id. at 957 (internal citations omitted).

"Absent qualifying language in the remarks, arguments made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent." *Digital Biometrics*, 149 F.3d at 1347. Rambus claims to have presented such "qualifying language" in a footnote of the above-quoted representation to the PTO, which mentions two of the inventive technologies claimed in this suit:

> The memory devices or integrated circuits having memory of the present invention may include additional and/or other inventive aspects, *including, for example, delay lock loop circuitry and/or an internal register to store a value which is representative of a number of clock cycles to transpire before the memory device responds to a read request.* This "latency" register may be employed to control the timing of the output data after receipt of, for example, a read request. However it is noted that, in light of the July 27, 1998 Office Action and the rejection based on Weymouth, these additional and/or other inventive aspects, although forming a basis of patentability in their own right, will not be the focus of these Remarks.

Supplemental preliminary Amendment, patent App. No. 08/798,525, p. 12, n. 1. Rambus maintains that the express exclusion of the delay locked loop system and the latency invention from the scope of the attorneys remarks makes it "preposterous" to read a device ID register limitation into the claims currently before the court. Instead, during the *Markman* hearing in this case, Rambus' expert Dr. Huber contended that the limitation applies to every other claim of the patent (claims 1-25) but not claim 26. This conclusion, according to Dr. Huber, is an obvious conclusion based on the fact that claim 26 includes the inventive technologies mentioned as additional and/or inventive features in the footnote.

Notwithstanding Rambus' current attempt to carefully craft its limitations without must support in the patent history, the footnote does not imply that the statement excludes claim 26, but rather establishes that, in addition to the device ID register, Rambus believed that it claims possessed other inventive features. The last sentence of the footnote shows that Rambus chose not to rely on those additional inventive features when distinguishing the claims from prior art. *See id.* ("these additional and/or other inventive aspects, although forming a basis for patentability in their own rights, will not be the focus of these Remarks"). Therefore, it is appropriate to read "integrated circuit device" as containing a device ID register, interface circuitry to receive a request from an external bus, and comparison circuitry to determine whether the identification information in the request corresponds to the identification register of the device.

Moreover, Rambus' suggested requirement that the integrated device be constructed on a single monolithic substrate is not supported by the specification and actually is undermined by the doctrine of claim differentiation. Claim 182 of the Preliminary Amendment to Patent App. No. 08/222,646, claim 6 of Patent No. 5,638,334 and claim 18 of Patent No. 5,657,481 all included the limitation that the device was "on a

single semiconductor substrate." Claim 26 of the 804 patent contains no such limiting language and the doctrine of claim limitation warns against reading such a limitation into the disputed claim language unless the intrinsic evidence counsels otherwise.

3. Construction

Thus, the patent history supports the construction that an integrated circuit device, as used on claim 26 of the '804 patent, must have a device ID register, interface circuitry and comparison circuitry.

III. The Extrinsic Evidence Generally: The Experts

The claim construction here has been accomplished largely without resort to extrinsic expert evidence, notwithstanding that the parties presented expert testimony addressing each disputed term. Having reviewed that testimony, the Court found it useful mostly in understanding the meaning of technical terminology other than the disputed terms as that terminology is used in the claims and specification. *See Pitney Bowes*, 182 F.3d at 1309 ("it is entirely appropriate, perhaps even preferable, for a court to consult trustworthy extrinsic evidence to ensure that claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understanding in the pertinent technical field").

As outlined in the substantive discussion of each term construed, Rambus pressed constructions that generally found little, if any, support in the claim language or the specification, depending in significant part upon the expert testimony of Dr. Huber whose testimony was generally at odds with the statements made by the inventors in the claims and specification. Thus, his extrinsic evidence had to be substantially disregarded as contradictory of the intrinsic evidence. Also, it was difficult to credit Dr. Huber's testimony on disputed terms because it reflected the general, and disturbing, tendency of Rambus to distance its current

constructions from what the inventors said in making the claims and explaining the inventions in the specification,[41] and, in so doing, to use the claim construction process to broaden claims, rather clearly not made in the intrinsic evidence.

The record here, and the approach to claim construction taken by Rambus, illustrate the wisdom and importance of the rules of law that establish a hierarchal distinction between intrinsic and extrinsic evidence. On the other hand, the testimony of Mr. Joseph McAlexander, the expert offered by Infineon, was quite helpful and very credible because it was tethered closely to the intrinsic evidence and was not contradictory of the claim language or the specification. Notwithstanding that his testimony was reliable and informative it was ultimately not essential except as specifically cited in the construction. *See Pitney Bowes*, 182 F.3d at 1309 ("Although the patent file may often be sufficient to permit the judge to interpret the technical aspects of the patent properly, consultation of extrinsic evidence is particularly appropriate to ensure that his or her understanding of the technical aspects of the patent is not entirely at variance with the understanding of one skilled in the art").

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[41] Moreover, Dr. Huber left the impression that he was more an advocate than he was one generally knowledgeable in the field of the invention, notwithstanding his rather impressive curriculum vitae.

CONCLUSION

For the foregoing reasons, the disputed terms in the four patents in suit are to be construed as reflected herein.

The Clerk is directed to send a copy of this Memorandum Opinion to all counsel of Record.

It is so ORDERED.

/s/ Robert E. Payne
United States District Judge

Richmond, VA
Date: March 15, 2001

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Richmond Division

RAMBUS, INC.,

Plaintiff,

v. Civil Action No. 3:00cv524

INFINEON TECHNOLOGIES AG,
and INFINEON TECHNOLOGIES
NORTH AMERICA CORP., and
INFINEON TECHNOLOGIES
HOLDING NORTH AMERICA, INC.

Defendants.

MEMORANDUM OPINION

A jury found the Plaintiff and Counterclaim Defendant Rambus, Inc., ("Rambus"), liable on Count 10 (actual fraud) and Count 11 (constructive fraud) of the counterclaims asserted by the Defendants and Counterclaim Plaintiffs Infineon Technologies AG, Infineon Technologies North America Corp. and Infineon Technologies Holding North America, Inc., (collectively "Infineon" hereinafter).

The jury awarded nominal and punitive damages on the actual fraud claim and nominal damages on the constructive fraud claim. Having preserved its options during the trial, Rambus now has moved for judgment as a matter of law ("JMOL") under Fed. R. Civ. P. 50, or, alternatively, for a new trial, under Fed. R. Civ. P. 59. Rambus contends that JMOL must be granted in its favor because: (1) Infineon failed to prove by clear and convincing evidence the elements of fraud

under Virginia law; (2) nominal damages are not available in fraud actions under Virginia law, therefore the punitive damages awarded on the basis of the nominal damage award must be set aside; (3) the preponderance of the evidence demonstrates that Infineon's fraud claims are barred by the two year statute of limitations, *see* Va.Code § 8.01-243 and 249(1); and (4) the Court erred in refusing to give Rambus' proffered jury instruction pursuant to *Kingsdown Medical Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867 (Fed. Cir. 1988). In its motion for a new trial, Rambus again alleges that: (1) Infineon did not establish the requisite elements of fraud; (2) the preponderance of the evidence shows that the fraud claims are barred by the statute of limitations; and (3) the Court erred in refusing to give Rambus' proffered instruction pursuant to *Kingsdown Medical*.

I. STATEMENT OF PROCEDURAL AND FACTUAL BACKGROUND

A. Procedural Background

Rambus filed a complaint on August 8, 2000, alleging that Infineon had infringed two of its patents. On October 20, 2000, Rambus filed a First Amended Complaint which added charges of infringement of two additional patents. On January 10, 2001, Infineon filed counterclaims alleging that: (1) it was entitled to a declaratory judgment that the four patents-in-suit were not infringed, were invalid and were unenforceable (Counts 1-4); (2) Rambus breached its contract with JEDEC[1], a technology standards-setting body (Count 8); (3) Infineon was entitled to damages as a third-party beneficiary of that breached contract (Count 9); (4) Rambus committed actual fraud while a member of JEDEC (Count 10); (5) Rambus committed constructive fraud while a member of JEDEC (Count 11); (6) Rambus obtained monopoly power in the relevant technology market in

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[1] "JEDEC" is the acronym for the Joint Electronics Devices Engineering Counsel. Its parent organization is the Electronic Industry Association.

violation of the Sherman Act, 15 U.S.C. § 2 (Count 12); (7) Rambus had attempted to obtain a monopoly in the relevant technology market in violation of the Sherman Act, 15 U.S.C. § 2 (Count 13); and (8) Rambus violated the Racketeer Influenced and Corrupt Organizations Act ("RICO"), 18 U.S.C. § 1961 *et seq*. through its fraudulent conduct at JEDEC (Count 14).

An opinion was issued pursuant to *Markman v. Westview Instrs. Inc.*, 52 F.3d 967 (Fed. Cir. 1995), *aff'd* 517 U.S. 370 (1996) to construe the disputed claim terms of the patents. Thereafter, Rambus abandoned, before trial, the charge of infringement as to one of the patents-in-suit, U.S. Patent No. 5,954,804. After the presentation of Rambus' infringement case, the Court granted JMOL in Infineon's favor on the remaining three patents-in-suit, U.S. Patent Nos. 5,953,263; 6,032,214; and 6,034,918. Infineon then agreed that its request for a declaratory judgment on the validity and enforceability of the patents-in-suit and its claim for monopolization were mooted by the infringement ruling (Counts 1-4 and 12). At the close of Infineon's case-in-chief on its counterclaims, the Court granted JMOL in favor of Rambus on the breach of contract claims (Counts 8 and 9) and the attempted monopolization claim (Count 13).

At the conclusion of the two and one-half week trial, in a special verdict form, the jury found Rambus liable for committing actual and constructive fraud (Counts 10 and 11) in its conduct at JEDEC respecting both the Synchronous Dynamic Random Access Memory ("SDRAM") and the Double Data Rate SDRAM ("DDR SDRAM") standards adopted by JEDEC. The jury awarded nominal damages in the amount of $1.00 on each of the fraud claims and punitive damages in the amount of $3,500,000.00 on the actual fraud claim. Pursuant to Va.Code § 8.01-38.1, the Court reduced the amount of punitive damages to $350,000.00. The jury found in favor of Rambus on the RICO claim (Count 14).

B. Factual Background

Rambus is a technology company that designs and licenses computer memory systems. Rambus does not manufacture memory devices, but instead licenses its technologies to semiconductor manufacturers. The existence and the profitability of Rambus depends entirely on securing patents and licensing them to manufacturers.

In April 1990, Rambus filed a patent application covering a new design for computer memory systems. The United States Patent and Trademark Office ("PTO") determined that this application, U.S. Patent App. No. 07/510,898 ("the '898 application"), contained 11 independent and distinct inventions. The PTO, therefore, required Rambus to select only one of those inventions to pursue in the '898 application and allowed it to file divisional applications on the remaining inventions. Rambus did precisely that.

As of the date of trial, Rambus had been granted 31 patents based on the 1990 '898 application and numerous applications are currently pending. Many of these early patents are directed to "Rambus DRAMs" or "RDRAMs," which is a predecessor to the SDRAM technology. Rambus has licensed several semiconductor manufacturers, including Infineon, for the RDRAM technology.

The four patents-in-suit, however, are addressed to SDRAMs and DDR SDRAMs. In a SDRAM, the central processing unit, or CPU, sends and receives information from the memory device according to the "tick" of a "clock" contained within the memory system. In DDR SDRAMs, the rate of the transfer of information is doubled because information is sent on both the "tick" and the "tock" of the clock.

Infineon makes and sells a variety of semiconductor devices to be used in computers, including SDRAMs and DDR SDRAMs. Infineon's fraud claim focused on Rambus' conduct while Rambus and Infineon were members of JEDEC, an

association of semiconductor manufacturers and designers who collaborate to develop industry-wide technical standards for semiconductor products in order to ensure that Dynamic Random Access Memory ("DRAM") products, made by different manufacturers, are compatible with one another. As part of its standardization process, JEDEC sought to avoid incorporating patented technology into its standards. To that end, JEDEC policy required members to disclose patents and patent applications that related to JEDEC's standard-setting work. If JEDEC decided to include a patented technology in a standard, its members who held patents on that technology were required (by agreement) to license that technology "under reasonable terms and conditions that are demonstrably free of any unfair discrimination."

A central issue in dispute at trial was whether, before 1993, JEDEC members had a duty to disclose *pending* patent applications (and not just patents that had been issued). In 1993, JEDEC Manual of Organization and Procedure JEP 21-1 was amended to state:

> The Chairperson of any JEDEC committee, subcommittee, or working group must call to the attention of all those present the requirements contained in EIA Legal Guides, and call attention to the obligation of all participants to inform the meeting of any knowledge they may have of *any patents, or pending patents*, that might be involved in the work they are undertaking.

(emphasis added). *See also id.* ("Standards that call for use of a patented item or process may not be considered by a JEDEC committee unless all of the relevant technical information covered by the patent or *pending patent* is known to the committee . . ."). Notwithstanding that the JEDEC manual did not explicitly provide, until 1993, that pending patents were to be disclosed, Infineon presented clear and convincing evidence at trial, through JEDEC members and representatives, that, at

all times at issue before 1993, the duty to disclose applied to pending applications.

JEDEC standard-setting activity was accomplished largely by committees and JEDEC Committee JC-42.3 was in charge of developing a standard for the SDRAM technology. Consideration of the SDRAM standard began in 1991 and a standard was eventually adopted in 1993. Various modifications were made to that standard from 1993 until 1995 and beyond. DDR SDRAM is the successor technology to the SDRAM technology. Committee JC-42.3 began work on the DDR SDRAM standard officially in 1996, although Infineon presented evidence showing that various technological concepts, which ultimately were included in the DDR SDRAM JEDEC standard, were discussed at Committee JC-42.3 meetings as early as 1992 and continuing thereafter throughout the time that Rambus was a member of JEDEC. The DDR SDRAM standard was published in 2000.

Rambus attended its first JEDEC meeting in December 1991 and joined the organization a few days later. Rambus representatives Richard Crisp and Billy Garrett regularly attended Committee JC-42.3 meetings until December 1996. By letter dated June 17, 1996, Rambus formally withdrew from JEDEC. In the time that Rambus was a member of JEDEC, it never disclosed any patent applications. It did, however, disclose its first patent to be issued, U.S. Patent No. 5,243,703 ("the '703 patent"), which issued on September 7, 1993. When Rambus withdrew from JEDEC, one stated reason was that its licensing business plan may not be consistent with the patent policies of standards-setting bodies like JEDEC.

The applications for the four patent-in-suit were submitted between 1997 and 1999 and issued in 1999 and 2000. However, the evidence showed that the four patents-in-suit are divisional or continuation applications of other Rambus patents which were pending during the time that Rambus was a member of JEDEC and at a time when Rambus had a duty to

disclose its pending patents. Infineon offered extensive evidence which convinced the jury that Rambus committed fraud by: attending JEDEC meetings, listening to the proposed technology to be included in the JEDEC standard, remaining silent (in the face of a duty to disclose) about its pending patent applications during those meetings, and, with the assistance of its patent lawyers, obtaining additional patents to cover the features of the JEDEC SDRAM standard, even as those features were being considered at Committee JC-42.3 meetings.

The foregoing recitation of the proof at trial provides a foundation for assessment of Rambus' post-trial motions, although additional evidence relevant to the disposition of the motions will be discussed in greater detail as it relates to each particular basis for the challenges made by Rambus to the jury's verdict.

II. DISCUSSION: JUDGMENT AS A MATTER OF LAW

A. Applicable Standard: Motion for Judgment as a Matter of Law

Under Rule 50(b) of the Federal Rules of Civil Procedure, if a party has requested and been denied JMOL during trial, "[t]he movant may renew its request for judgment as a matter of law by filing a motion no later than 10 days after entry of judgment—and may alternatively request a new trial or join a motion for a new trial under Rule 59." A district court may grant a motion under Rule 50(b) if it determines, "without weighing the evidence or considering the credibility of the witnesses, that substantial evidence does not support the jury's findings." *Konkel v. Bob Evans Farms, Inc.*, 165 F.3d 275, 279 (4th Cir. 1999), *cert. denied*, 528 U.S. 877, (1999). *See also Wilhelm v. Blue Bell, Inc.*, 773 F.2d 1429, 1433 (4th Cir. 1985) ("The test for determining whether [JMOL] should be entered is whether, viewing the evidence in the light most favorable to the appellee- plaintiff, there is substantial evidence in the record to support the jury's findings."), *cert. denied*, 475 U.S. 1016 (1986). Furthermore, "[t]he movant is entitled to judgment as a

matter of law if the nonmoving party failed to make a showing on an essential element of his case with respect to which he had the burden of proof." *Singer v. Dungan*, 45 F.3d 823, 827 (4th Cir. 1995) (internal citations omitted).

"Judgment as a matter of law is proper only when, without weighing the credibility of the evidence, there can be but one reasonable conclusion as to the proper judgment." *Scheduled Airlines Traffic Offices, Inc. v. Objective, Inc.*, 180 F.3d 583, 588 (4th Cir. 1999). The evidence must be viewed in the light most favorable to the non-moving party and every legitimate inference must be drawn in that party's favor. *See Tools USA and Equip. Co. v. Champ Frame Straightening Equip. Inc.*, 87 F.3d 654, 657 (4th Cir. 1996). "The district court also 'must view the evidence presented through the prism of the substantive evidentiary burden.'" *Byelick v. Vivadelli*, 79 F. Supp. 2d 610, 616 (E.D. Va. 1999) (citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 250-52 (1986)) (in the context of motion for summary judgment).

B. The Constructive Fraud Verdict

Infineon argued, and the jury found, that Rambus committed constructive fraud while it was a member of JEDEC by failing to disclose its patents and pending patent applications which related to the standard-setting work underway at JEDEC, in spite of a duty to disclose those patents and patent applications. To prevail on a claim of constructive fraud, a plaintiff must prove:

> that a false representation of material fact was made, innocently or negligently, and that the injured party suffered damage as a result of his reliance on the misrepresentation. In addition, the evidence must show that the false representation was made so as to induce a reasonable person to believe it, with the intent that a person would act on this representation.

Henderson v. Henderson, 255 Va. 122, 495 S.E.2d 496, 499 (1998) (citations omitted). Rambus has challenged the finding of constructive fraud on numerous evidentiary grounds and requests a grant of JMOL in its favor. Although the finding of liability on the constructive fraud claim must be set aside, that conclusion is reached purely as a matter of Virginia law, not on an asserted failure of the evidence.

Earlier in these proceedings, when considering Rambus' motion to dismiss Infineon's counterclaims, the Court raised, *sua sponte*, the question whether Infineon could properly assert a constructive fraud claim based on a negligent *omission*. However, at that time, the motion to dismiss was denied and Infineon was allowed to proceed on the claim for constructive fraud so that, if the evidence established such a claim, it would be redressable.

Notwithstanding that Rambus, in pressing its motion to dismiss, failed to initially raise the argument that Virginia law did not permit a claim for negligent omission, nor did it assert that argument as grounds for JMOL at trial or in the current motion, further independent consideration of the matter reveals that Count 11 should not have been submitted to the jury because constructive fraud cannot, as a matter of Virginia law, be premised on an fraudulent omission or concealment of a material fact. Instead, "a claim for fraud by omission requires *deliberate* non-disclosure" *Bank of Montreal v. Signet Bank,* 193 F.3d 818, 833 (4th Cir. 1999) (emphasis added) (citing *Hitachi Credit America Corp. v. Signet Bank*, 166 F.3d 614, 628 (4th Cir. 1999)), which, of course, precludes a claim for constructive fraud. The Fourth Circuit further explained that:

> [t]his observation is confirmed by the Supreme Court of Virginia, which requires "either an allegation or evidence of a knowing and a deliberate decision not to disclose a material fact" in a concealment claim.

Id. (citing *Norris v. Mitchell*, 255 Va. 235, 495 S.E.2d 809, 812 (1998)). The constructive fraud claim, as pleaded and proved, should not have been presented to the jury; therefore, JMOL is granted in favor of Rambus on Count 11 and the jury verdict finding liability on that count is set aside.

C. The Actual Fraud Verdict As To Rambus' Conduct Respecting The JEDEC SDRAM Standard-Setting Process

To support a claim of actual fraud, the plaintiff must prove: (1) a false representation or an omission (when there is a duty to disclose); (2) of a material fact; (3) made intentionally and knowingly; (4) with the intent to mislead; (5) reasonable reliance by the party mislead; and (6) resulting damage to the party misled. *See ITT Hartford Group, Inc. v. Virginia Finan. Assoc., Inc.*, 258 Va. 193, 520 S.E.2d 355, 361 (1999); *McDaniel v. Hodges*, 176 Va. 519, 11 S.E.2d 623, 625 (1940). *See also Bank of Montreal v. Signet Bank*, 193 F.3d 818, 829 (4th Cir. 1999) (a duty to disclose may arise if (1) a fact is material and the one concealing it has superior knowledge and knows that the other is acting upon the assumption that the fact does not exist or (2) if one party diverts the other from making prudent investigations); *Allen Realty Corp. v. Holbert*, 227 Va. 441, 318 S.E.2d 592, 597 (1984) ("Concealment of a material fact by one who knows that the other party is acting upon the assumption that the fact does not exist constitutes actionable fraud.").

Rambus contends that it is entitled to JMOL on the actual fraud claim because Infineon failed to prove that: (1) Rambus had a duty to disclose its patents and patent applications; (2) Rambus violated that duty; (3) Rambus intended to mislead Infineon; (4) Infineon's reliance was reasonable; and (5) Infineon sustained pecuniary damage caused by the fraud. As explained below, the clear and convincing evidence presented at trial permitted the jury to conclude that Rambus

committed actual fraud as to the SDRAM standard-setting process at JEDEC.

1. The Duty To Disclose Pending Patent Applications

As an initial matter, Rambus acknowledges that it had a duty to disclose any issued patents while it was a member of JEDEC and participated in JEDEC's standard-setting process. Thus, the dispute at trial was whether *patent applications* were required to be disclosed. Rambus argues that, during the relevant timeframe when the SDRAM standard was being considered by Committee JC-42.3, JEDEC policy required only the disclosure of issued patents, not patent applications. Thus, because Rambus did not obtain its first patent until September 1993 (the '703 patent), it contends that it complied with JEDEC policy by disclosing that patent.

The evidence presented by Infineon at trial, however, tells a different story. Infineon presented testimony from three JEDEC representatives indicating that JEDEC policy always required the disclosure of pending patent applications, notwithstanding the absence of language to that effect in the JEDEC manual before 1993. For example, John Kelly, who is the president and former legal counsel of JEDEC, agreed at trial that, although the language of the manual changed in 1993, the JEDEC policy requiring disclosure of patent applications did not change from 1991 to 1996. Former chairman of Committee JC-42.3 and JEDEC attendee from 1984-1998, Gordon Kelley, testified that: (1) before placing the requirement to disclose pending patent applications in the manual, the committee practiced that requirement; (2) the use of the term "known patent" in the pre-1993 JEDEC manuals applied to patent applications as well; and (3) from the discussions at every JEDEC meeting from 1991 to 1996, it was very clear to the membership that disclosure of applicable patents and patent applications was a requirement because it was key to the operation of the committee. Reese Brown, a JEDEC consultant and member of

Committee JC-42.3 for 25 years, testified that, during the SDRAM standardization process from 1991 to 1996, if a member had a pending patent application relating to the standardization effort, the member had a duty to disclose the pending patent.

The testimony of those witnesses respecting the policy and practice at JEDEC was corroborated by the evidence from JEDEC's meeting minutes documenting that members of JEDEC actually disclosed pending patents prior to 1993. The fact that JEDEC members disclosed otherwise confidential patent applications during the applicable time period further underscores the existence of a duty to disclose at JEDEC because, absent a duty imposed by JEDEC membership,[2] there is an entitlement to keep patent applications secret.

Furthermore, Infineon demonstrated that Rambus officials themselves understood that it was JEDEC's practice to require disclosure of pending patent applications. For example, an email from Rambus' president David Mooring reported the events of a JEDEC meeting and stated:

> IBM raised the issue that they were aware that some "voting" JEDEC attendees have *patents pending* on SDRAMs that they have not made the commit[t]ee aware of. They will come to the next meeting with a list of the offenders.

Likewise, after attending a JEDEC meeting, Rambus representative Billy Garrett reported that "Fujitsu indicated that they do have patents applied for, but that they will comply with

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[2] Rambus also argues that there is no case law supporting the notion that a patent applicant may be sanctioned for its failure to disclose a *confidential* patent application. While Rambus is correct in its assertion that a patent applicant has no general obligation to reveal its confidential application, that principle is overridden where the party is voluntarily a member in an organization which imposes a duty to disclose those otherwise confidential applications.

the JEDEC requirements to make it a standard!!!". Both the Mooring email and the Garrett notes were written in 1992, well within the timeframe of the SDRAM standard-setting effort.

Viewing the evidence in the light most favorable to Infineon, the jury reasonably could have concluded, on the basis of clear and convincing evidence, that, (notwithstanding the absence, until 1993, of an explicit reference to pending patents in the JEDEC manual), all members, at all times here pertinent, had a known duty to disclose patent applications that related to the SDRAM standard-setting effort. Therefore, Rambus' motion for JMOL on this ground is denied.

2. The Patents That Should Have Been Disclosed

Rambus next argues that Infineon failed to present any evidence at trial identifying the patent applications that were pending during Rambus' JEDEC membership which related to the proposed SDRAM standard. Thus, in its view, Infineon failed to show that the duty to disclose a pending patent was triggered.

The evidence presented at trial established that, throughout its membership in JEDEC, Rambus had pending applications relating to JEDEC's SDRAM work and that Rambus drafted more patent claims intentionally designed to cover the technology under consideration by JEDEC, thereby generating additional patent applications. Rambus had pending patent claims relating to 2-bank SDRAM designs, externally supplied reference voltage, phase lock loops (PLLs), programmable CAS latency and programmable burst length. For example, the evidence shows that, when JEDEC discussed adding a 2-bank design and burst- length technology to the SDRAM standard, Rambus had claims relating to those technologies pending in its first patent application, the '898 application. Additionally, Patent Application No. 07/954,945, which was filed in September 1992 and issued in June 1994 as U.S. Patent No.

5,319,755, contains claims directed toward programmable burst length.

Infineon also presented evidence establishing that U.S. Patent Application No. 07/847,961, which was filed by Rambus in March 1992 but was eventually abandoned, contains claims directed toward CAS latency, a technology that was incorporated into the SDRAM standard. Similarly, Patent Application No. 07/847,651, which was filed in March 1992 and issued as U.S. Patent No. 5,606,717 in February 1997, contain claims directed to CAS latency as well. As to PLL technology, which was discussed at JEDEC presentations in 1994 and 1995, Rambus had pending claims relating this technology in Patent Application No. 07/847,692, which was filed in March 1992, but was abandoned. Lastly, Rambus' Patent Application No. 07/847,532, which was filed in March 1992 and issued as U.S. Patent No. 5,473,575 in December 1995, contains claims directed to an externally supplied reference voltage. JEDEC discussed this technology in 1992 and it was ultimately incorporated into the SDRAM standard.[3]

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[3] Rambus contends that Infineon's positions on the relevancy of certain patents are patently inconsistent. For example, Infineon has argued that disclosure of the '703 patent, which would then reveal the 1990 '898 application, did not satisfy Rambus' duty to disclose because those patents are directed primarily to the RDRAM technology. *See* Section II.C.3, *infra*. However, in the context of arguing which patents should have been disclosed, Infineon contends that certain claims in the '898 patent should have been made known to JEDEC.

Rambus' attack is specious. The answer lies in recognizing that the JEDEC policy requires disclosure of all patents and patent applications which "related" to the work of JEDEC. The basis for the broader scope of this policy is quite clear because the patent holder or applicant is in the best position to determine the scope of its intellectual property claim and, therefore, its application to JEDEC's work. Here, Rambus clearly knew that it was in the process of expanding the claims based on the '898 patent to cover the SDRAM technology.

Rambus argues that this aspect of Infineons' claim fails because Infineon presented no expert testimony respecting the scope of the Rambus patents or patent applications and their relationship to JEDEC's SDRAM standard-setting effort. That argument misses the mark because the connection between Rambus' patents and the SDRAM standard was sufficiently established through testimony given, and the documents generated, by Rambus' executives. Although Infineon presented evidence too voluminous to catalog about Rambus' pervasive expansion of its pending patent portfolio in response to discussions held at JEDEC standard-setting meetings, a few examples of that evidence help to illustrate the connection established at trial between the patents and JEDEC work. For instance, Richard Crisp testified that, while it was a member of JEDEC, Rambus repeatedly revised pending claims and drafted new claims for inclusion in pending or about-to-be-filed applications in order to cover JEDEC's proposed SDRAM standard. In May 1992, Crisp met with Rambus' patent attorney to "add claims to our patent application broad enough to cover the SDRAM if the SDRAM uses mode register and programmable CAS latency." These features recently had been discussed at a JEDEC meeting which Crisp attended. Emails sent by Crisp during those meetings also shows that Rambus had patents covering externally supplied reference voltage technology, a topic then being discussed at the JEDEC standard-setting meetings.[4]

Similarly Rambus' Chief Executive Officer Geoff Tate admitted that Rambus intentionally drafted claims to cover SDRAMs in the early 1990s. The documents exchanged between Rambus' patent attorney Lester Vincent, Crisp and other Rambus employees further proved the extensive efforts to

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[4] Crisp often composed and sent email messages back to Rambus' executives and in-house counsel while discussions at JEDEC meetings were taking place. Other communications were sent during recesses between standard-setting sessions.

revise patent applications or draft new ones for the purpose of securing patent protection for the very technologies chosen for incorporation into JEDEC's forthcoming standard.

Thus, Infineon proved, by clear and convincing evidence, that the duty to disclose was triggered because several of Rambus' pending patents related to JEDEC's SDRAM standard-setting effort. The JEDEC Manual unambiguously states that the patent disclosure policy applied to any patents or pending patents "that might be involved in the work [the JEDEC committee is] undertaking" and Infineon's witnesses testified that this requirement was practiced prior to 1993. Infineon's evidence showed that Rambus had patents pending on a two bank design, programmable CAS latency, programmable burst length, PLL and an externally supplied reference voltage, all of which related to JEDEC's standardization efforts. Because the jury reasonably could have drawn the conclusion that these patents should have been disclosed, the motion for JMOL on this ground is denied.

3. Breach Of The Duty To Disclose

Rambus next argues that Infineon failed to prove that Rambus breached the duty to disclose its patents and patent applications. Specifically, Rambus asserts that, because the applications for the patents-in-suit were not filed or issued until after Rambus left JEDEC, no patents or pending patents existed for Rambus to disclose. Rambus' argument, however, proceeds upon an artificial limitation of the scope of the fraud alleged and proven by Infineon. Infineon did not circumscribe its fraud claim only to the four patents-in-suit; instead, it alleged that Rambus committed fraud upon Infineon (as a member of the JEDEC committee), by failing to disclose any pending patents related to the SDRAM work. Moreover, Rambus simply ignores the evidence that the patents-in-suit are merely refinements of the continuation and divisional applications that were pending while Rambus was a member of JEDEC and that were themselves revised to ensure that Rambus' patents would

cover products compliant with the forthcoming JEDEC standard.

As an alternate argument, Rambus contends that it satisfied its duty of disclosure. Specifically, it points to: (1) discussions in JEDEC meetings about the public international patent application (which shares an identical written description to the patents in the U.S. Patent family tree); (2) the disclosure of Rambus' Technical Description to Siemens (a corporate predecessor of Infineon) in the early 1990s; (3) the disclosure by Richard Crisp of the '703 patent in a September 1993 JEDEC meeting; and (4) the disclosure of numerous patents in its withdrawal letter from JEDEC.

Rambus' application for an international patent (through the World Intellectual Property Organization, or "WIPO") became public information in October 1991. This WIPO application contains the same written description as its U.S. counterpart—the undisclosed '898 application filed in April 1990. Likewise, the undisclosed divisional and continuation applications originating from the 1990 application share this same written description. Thus, Rambus posits that it met its duty because the SDRAM applications (that were not disclosed), as well as the patents-in-suit, are based on the very same written description as in the WIPO application.

Similarly, Rambus also contends that it met its disclosure obligation by sharing its Technical Description with Infineon's predecessor, Siemens, in November 1990. The Technical Description, which is based on the written description of the patents, was used by Rambus as an informational document in its early licensing discussions with various semiconductor manufacturers in connection with RDRAM technology. Rambus alleges that, during the licensing negotiations, it revealed much of its patent portfolio to Infineon (and other JEDEC members), though at that time, Rambus did not yet have any issued patents.

The evidence presented by Infineon, however, permitted the jury to conclude that the discussions between Rambus and Siemens, focused solely on *RDRAMs*. Rambus offered no evidence demonstrating that it ever told Siemens that it believed its Technical Description could cover SDRAMs, as well as RDRAMs. This same shortcoming applies to the WIPO patent application; while the written description may be the same as that in the undisclosed SDRAM patents, Rambus presented no evidence at trial indicating that the description, on its face, relates to SDRAMs. Further, at the relevant time, the WIPO patent claims based on that written description related to only RDRAM, as reflected in Rambus' pleadings in earlier motions for summary judgment.

As a third theory of compliance with its duty to disclose, Rambus argues that disclosure of the '703 patent was sufficient. Although Richard Crisp testified that the '703 patent related only to RDRAMs, Rambus contends now that, with the revelation of this patent, all Rambus' other patents and patent applications were revealed. Thus, any JEDEC member could obtain copies of the original '898 application; the continuation application that resulted in U.S. Patent No. 5,319,755 ("the '755 patent"); and the prosecution history of the '755 patent, which is the progenitor of three of the patents-in-suit, and is the first patent issued to Rambus which relates to SDRAMs.

Infineon, however, proved that revelation of the '703 patent, if anything, actually misrepresented the scope of Rambus' pending patents because the '703 patent admittedly did not relate to the SDRAM work of the committee and, when Crisp revealed the patent, he failed to say anything about Rambus' numerous other pending applications, which did relate to the SDRAM standardization work. Furthermore, as to the '755 patent, Infineon demonstrated that (even if one were to have investigated the history of this patent) the '703 patent *did not* disclose the application for the '755 patent because the '703 patent application only cross-referenced those patent

applications pending at the time that the '703 application was filed. Because the application for the '755 patent was filed *after* the '703 application, the '755 patent was not included in the patent history of the '703. Infineon offered evidence from which the jury could conclude that the '703 patent did not reveal the '755 patent and Rambus offered no evidence to the contrary.

Lastly, Rambus asserts that the letter by which it withdrew from JEDEC disclosed every patent issued to Rambus as of June 1996 which related to SDRAMs. That is not borne out by the evidence. Indeed, a key patent, U.S. Patent No. 5,513,327, was omitted from the list. Rambus asserted that the omission was inadvertent. Infineon offered evidence that the omission was deliberate. Further, Rambus contends that the withdrawal letter satisfied the duty to disclose because Rambus stated therein that it "has applied for a number of patents in order to protect Rambus technology." However, there was no evidence that this disclosure satisfied the requirements of JEDEC's patent disclosure policy; and the text certainly does not disclose that Rambus had applied for patents that encompassed the JEDEC SDRAM standard.

In sum, clear and convincing evidence supports the jury's finding that Rambus breached its duty to disclose its patents and patent applications. The jury reasonably could have believed that the existence of the public WIPO application was not sufficient to satisfy the duty to disclose because the written description contained therein gave no indication that Rambus intended to expand its patent applications to cover SDRAMs. The jury, again, could reasonably conclude that the licensing discussions between Rambus and Siemens/Infineon were limited to RDRAM and that Siemens/Infineon had no reason to believe that Rambus intended to expand its intellectual property beyond RDRAMs. As to the disclosure of the '703 patent, Rambus admits that this patent related only to RDRAM. Although Rambus makes the argument that the '703 disclosed

every then-pending patent, the evidence at trial supports the conclusion that, if one traced Rambus' rather voluminous patent tree from the '703 patent, one would not discover the '755 patent application. Lastly, there was no evidence demonstrating that Rambus' withdrawal letter, or the list of patents attached thereto, satisfied that duty.

4. Evidence Of Intent to Mislead

Rambus contends that the jury verdict finding Rambus liable for actual fraud is unsupported by the evidence because Infineon failed to show that Rambus acted knowingly and intentionally with the intent to mislead. *See Richmond Metro. Auth. v. McDevitt St. Bovis, Inc.*, 507 S.E.2d 344, 346 (Va. 1998) (the misrepresentation or omission must be made knowingly and intentionally). *See also Bank of Montreal*, 193 F.3d at 833 ("a claim for fraud by omission requires deliberate non-disclosure"). Instead, Rambus contends that the evidence could support, at most, the conclusion that Rambus mistakenly believed that it had no duty to disclose patent applications.

That argument is utterly without merit. Infineon, for example, proved that Rambus' president, David Mooring, and its JEDEC representatives, Garrett and Crisp, knew of the disclosure obligation. Rambus' executives discussed these duties with the lawyers who were prosecuting the company's patent applications. Rambus' conduct, viewed in light of that knowledge, underscores the proof of scienter. Thus, Infineon, demonstrated that Rambus, through its executives, sought to patent the technology being discussed at JEDEC so that it could later bring patent infringement suits. Furthermore, e-mails written by Richard Crisp show that, rather than informing JEDEC about its issued and pending patents, Rambus intentionally decided to keep these secret. For example, after being questioned about Rambus patents on the Synclink proposal (a technology not at issue in this action), Crisp wrote to the executives at Rambus the following:

> We may want to walk into the next JEDEC meeting and simply provide a list of patent numbers which have issued and say "we are not lawyers, we will pass no judgment of infringement or non-infringement, but here are our issued patent numbers, you decide for yourselves what does and does not infringe." On the other hand, we may not want to make it easy for all to figure out what we have especially if nothing looks really strong. If we have a really strong one that has issued that is key to the operation of the SLDRAM, then we may want to play that card, but again with the above suggested disclaimer.

A second email written by Crisp also discloses an intent to deliberately remain silent about the company's patents and patent applications. After attending a JEDEC meeting in which a JEDEC member presented a proposal describing the advantages of incorporating an on-chip PLL in the SDRAM, Crisp wrote:

> They plan on putting a PLL on board their SDRAMs to improve the output delay by about 2 ns. They want to put the PLL on every chip and let the user use it or not depending on whether they need it . . . Obviously we need to think about our patent position on this for potential discussion with NEC regarding patent issues here. * * * I believe that we now have seen that others are seriously planning inclusion of PLLs on board SDRAMS . . . What is the exact status of the patent with the PLL claim?* * *

Lastly, Rambus' own documents refute the notion that it harbored the mistaken belief that patent *applications* were not required to be disclosed. In his notes regarding the Synclink proposal, Crisp stated that "Synclink is being sponsored by an organization with *a less stringent patent policy than JEDEC.*"

(emphasis added). In other words, under a less demanding non-JEDEC standard-setting process, patentees were "free to patent whatever they desire, and are not bound to relinquish any of their rights to their patents by presenting their ideas for standardization." The clear inference of Crisp's statement, and the one drawn by the jury, is that Crisp believed that JEDEC had a more restrictive patent policy which imposed a duty of disclosure and limited the ability to patent subject matter considered by the standard-setting body. Other documents presented at trial from Rambus' executives also demonstrate that Rambus clearly understood the scope of the patent policy.

Rambus' argument that it had only a mistaken belief regarding JEDEC's disclosure policy presents no basis upon which to grant JMOL, for there is ample evidence of scienter.

5. Reasonable Reliance

Rambus next argues that Infineon failed to show that its reliance on Rambus' non-disclosures at JEDEC meetings was reasonable under the circumstances. *See McDaniel v. Hodges*, 11 S.E.2d 623, 625 (Va. 1941).[5] Infineon agrees that its reliance had to have been reasonable, but asserts that its reliance was, in fact, reasonable.

Rambus argues that Infineon's reliance cannot be considered in the vacuum of JEDEC activities, but instead must be viewed in light of the relationship between the parties—a relationship that began several years before Infineon designed its first SDRAM in 1996. To support that argument, Rambus again

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[5] *McDaniel* states that "[i]f one represents as true what is false, in such a way as to induce a *reasonable* man to believe it, and the representation is meant to be acted upon and he to whom the representation is made, believing it to be true, acts on it, and thereby sustains damage, there is ground to support an action of deceit at law ..." *Id.* (emphasis added). More recent Supreme Court of Virginia decisional law omits any requirement of reasonableness. *See e.g. Richmond Metro. Auth.*, 507 S.E.2d at 346. At the request of Rambus, the jury in this case was instructed that reliance must be reasonable.

points to the RDRAM licensing discussions between Rambus and Siemens in 1991 and argues that, during those discussions, Siemens thoroughly studied all of Rambus' technology. Rambus also contends that executives at Siemens realized that Rambus' technology could have a broader scope that just RDRAMS, therefore any reliance on Rambus' silence at JEDEC was unreasonable.

Infineon offered proof from which the jury could have found that the course of conduct between the parties reveals not that Infineon knew of the patents, but rather that it had concerns about Rambus' patent rights. Infineon also proved that Rambus intentionally misled Infineon when it and other JEDEC members raised those concerns with Rambus, thus inducing Infineon to believe that Rambus did not have any SDRAM patents or applications. For example, Rambus presented documents and testimony indicating that Willibald Meyer, Infineon's JEDEC representative, had concerns as early as 1992 that Rambus may have patent applications addressed to the 2-bank SDRAM design then being considered by JEDEC. In pursuing this concern, at a May 1992 JEDEC meeting, Meyer requested the Chairman of Committee JC-42.3, Gordon Kelley, to ask Richard Crisp about Rambus' patent rights relating to the 2-bank SDRAM. Crisp made no disclosure, leading Meyer and others to believe that Rambus had nothing that required disclosure. At this same 1992 JEDEC meeting, another JEDEC member mentioned that Rambus had an international patent application (the WIPO application), but that the patent claims were likely invalidated by prior art. Rambus again made no disclosure.

Infineon also presented testimony from Meyer indicating that he was misled by the disclosure of the '703 patent because, when he read that patent, he concluded that Rambus' technology therein disclosed related only to RDRAMs. Rambus took, in this litigation, that very same position in the motions for summary judgment. The jury then was entitled to

find that Meyer's assessment was a reasonable one. Lastly, Infineon presented documents from Meyer, composed at the time the SDRAM standard was under consideration, indicating that Meyer believed the JEDEC SDRAM standard was "public domain," which again supports the jury's conclusion.

Without weighing the credibility of the evidence, there was more than one reasonable conclusion that could be drawn from the evidence regarding the reasonableness of Infineon's reliance and the jury's conclusion that Infineon acted reasonably is supported by clear and convincing evidence. Therefore, Rambus' motion for JMOL on this ground is denied.

6. Harm Caused By The Fraud

Rambus contends that JMOL must be granted in its favor because the only injury that Infineon claims to have suffered as a result of the fraud is the incurrence of attorneys' fees and, as a matter of law, attorneys' fees cannot be the damage or injury element of a claim for fraud under Virginia law. *See ITT Hartford Group, Inc. v. Virginia Finan. Assoc., Inc.*, 520 S.E.2d 355, 361 (Va. 1999) (to support a claim of fraud, the plaintiff must prove resulting damage to the complaining party). Rambus is correct in asserting that the only monetary injury[6] claimed by Infineon as the injury component of its fraud claim is the attorneys' fees it paid to the law firm of Slater & Matsil to review, and help outline the defense of, Rambus' infringement claims.[7]

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[6] Infineon also showed that it was injured by the fraud in another way, specifically in the risk of its investment in product design, and plant to build its JEDEC compliant SDRAM products, much of which would be jeopardized if its products infringed any of Rambus' patents, the non-disclosure of the applications for which was instrumental in the final content of the JEDEC standard.

[7] Infineon did not seek to recover those fees paid to its current trial counsel, the law firm of Kirkland & Ellis, though it also prepared a defense to the infringement claims.

Analysis of the issue begins with recognition that Virginia follows the general "American Rule" that "in the absence of any contractual or statutory liability therefor, attorneys' fees and expenses incurred by the plaintiff in the litigation of his claim against the defendant . . . are not recoverable ..." *Hiss v. Friedberg*, 112 S.E.2d 871, 875 (Va.. 1960). *See also Prospect Dev. Co. v. Bershader*, 515 S.E.2d 291, 300 (Va. 1999) ("The general rule in this Commonwealth is that in the absence of a statute or contract to the contrary, a court may not award attorney's fees to the prevailing party."); 44 A.L.R. 4th 776, § 2(a) ("The general rule carried over from common law is that a successful party in litigation is not entitled to recover from his opponent the attorneys' fees."). Other than the nominal, statutory costs, incurred in prosecuting or defending the action.

Infineon argues that this case is an exception to the general rule because the attorneys' fees it paid are a damage or injury proximately caused by the fraud committed by Rambus. Specifically, Infineon showed at trial that it was forced to pay attorneys' fees to Slater & Matsil in connection with the analysis and defense of Rambus' patent infringement charges. Also, Infineon presented evidence in the form of Rambus' business plans and testimony from which the jury could have concluded that the patent infringement suit was part and parcel of Rambus' fraud—the last step in the fraud. Infineon proved that, because of Rambus' fraudulent behavior while it was a member of JEDEC, Infineon designed the JEDEC compliant products which were alleged to have infringed the patents- in-suit. When Rambus instituted the final step in its fraudulent plan by charging that those patents were infringed by JEDEC-compliant SDRAM products, Rambus caused Infineon to expend substantial sums of money to investigate the merits of, and defend against, the infringement claims.[8]

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[8] The attorneys' fees alleged as injury in the fraud claim are not those which Infineon may recover under 35 U.S.C. § 285 (exceptional case fees) or as a

a. Exceptions To The General Rule

There are several exceptions to the American rule foreclosing recovery of attorneys' fees in most cases. For example, courts generally allow a party to recover attorneys' fees when the "tort of another" has caused him to incur attorneys' fees during litigation with a third party. The Restatement (Second) of Torts § 914 (1979) explains:

> § 914. EXPENSE OF LITIGATION
>
> (1) The damages in a tort action do not ordinarily include compensation for attorney fees or other expenses of the litigation.
>
> (2) One who through the tort of another has been required to act in the protection of his interests by bringing or defending an action against a third person is entitled to recover reasonable compensation for loss of time, attorney fees and other expenditures thereby suffered or incurred in the earlier action.

Accord Brochner v. Western Ins. Co., 724 P.2d 1293, 1299 (Colo. 1986); *Tetherow v. Wolfe*, 392 N.W.2d 374, 379 (Neb. 1986); *Pullman Standard, Inc. v. Abex Corp.*, 693 S.W.2d 336, 340 (Tenn. 1985); *Gray v. Don Miller & Assoc., Inc.*, 674 P.2d 253, 258 (Cal. 1984); *Department of Envtl. Prot. v. Ventron Corp.*, 468 A.2d 150, 166 (N.J. 1983).

Virginia courts have adopted that exception by recognizing the analogous principle that "where a breach of contract has forced the plaintiff to maintain or defend a suit with a third person, he may recover the counsel fees incurred by him in the former suit provided they are reasonable in amount and reasonably incurred." *Hiss*, 112 S.E.2d at 875-76. *See also Owen v. Shelton*, 277 S.E.2d 189, 192 (Va. 1981); *Cemetery*

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prevailing party on its fraud claim.

Consultants, Inc. v. Ware, 180 S.E.2d 528 (Va. 1971). In those cases, the attorneys' fees were not awarded to a party because of his status as a prevailing party, but instead were permitted as an element of the injury caused by the defendant's conduct. *See Hiss*, 112 S.E.2d at 875 ("The troublesome question is whether in this action for breach of contract the [plaintiffs] are entitled to recover of [the defendants] as *an element of their damages* the costs of their litigation, including counsel fees, with [a third party].") (emphasis added). The recovery of fees in cases of that sort, however, generally has been limited to fees incurred during litigation with *third parties*, not in antecedent litigation between the same parties. *See Hiss*, 112 S.E.2d at 875 ("Nor are attorneys' fees and other expenses incurred in former litigation between the same parties recoverable in a subsequent action.") (citing Am.Jur. Damages, § 142, pp. 500, 551; *Burruss v. Hines*, 26 S.E. 875 (Va. 1897); *Wisecarver v. Wisecarver*, 34 S.E. 56 (Va. 1899)).

Nevertheless, it is generally recognized that, in an appropriate case, a party also can recover attorneys' fees incurred in previous litigation between the *same* parties:

> As a general rule, litigation costs and attorney's fees incurred in prior litigation against the same defendant are not recoverable in subsequent action. *However, the rule is different if the plaintiff has a cause of action for financial loss resulting directly from the previous action.* Thus, counsel fees and other reasonable expenses damages in defending a suit that was maliciously instituted against the plaintiff may be recovered in the action for malicious prosecution. *Also, an exception to the general rule exists if the wrongful action of the defendant has placed the plaintiff in such a position that it is necessary to incur legal expenses to protect his interest.*

22 Am. Jur. 2d Damages § 617 (1988) (emphasis added). Virginia courts have recognized this exception and have allowed attorneys' fees incurred in previous litigation between the same parties to be recovered as damage in actions for the intentional torts of malicious prosecution and false imprisonment.[9]

For example, in *Burruss v. Hines*, 26 S.E. 875, 878 (Va. 1897), the Supreme Court of Virginia explained that "[t]he general rule is that counsel fees are not recoverable as damages; but on the trial of an action for malicious prosecution or false imprisonment, where exemplary damages are recoverable, the fees paid or incurred to counsel for defending the original suit or proceeding may be proved, and if reasonable and necessarily incurred, may be taken into consideration by the jury in the assessment of damages." Similarly, in actions for false imprisonment "damages awarded must be compensatory for the loss of time; for the suffering, bodily and mental, sustained by reason of such wrongful act or acts; and *for expenses incurred in procuring discharge from restraint, including a reasonable attorney's fee.*" *Bolton v. Yellines*, 26 S.E. 847, 850 (Va. 1897) (emphasis added). *See also Parsons v. Harper*, 1860 WL 4034,

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[9] The Supreme Court of Virginia has also:

> permitted a trustee, who defended his trust in good faith, to recover attorney's fees from the estate, *Cooper v. Brodie*, 253 Va. 38, 44, 480 S.E.2d 101, 104 (1997), and we have approved an award of attorney's fees in certain cases involving alimony and support disputes even though such awards of attorney's fees were neither authorized by statute nor by contract. *See Carswell v. Masterson*, 224 Va. 329, 331-32, 295 S.E.2d 899, 900-01 (1982); *Alig v. Alig*, 220 Va. 80, 86, 255 S.E.2d 494, 498 (1979); *McKeel v. McKeel*, 185 Va. 108, 116-17, 37 S.E.2d 746, 750-51 (1946); *McClaugherty v. McClaugherty*, 180 Va. 51, 69, 21 S.E.2d 761, 768 (1942); *Heflin v. Heflin*, 177 Va. 385, 399-400, 14 S.E.2d 317, 322 (1941).

Bershader, 515 S.E.2d at 301.

* 6 (Va. 1860) (allowing recovery of attorneys' fees for action for false imprisonment).[10]

To recover attorneys' fees, however, Virginia law requires a showing that the injury inflicted in the underlying action was wanton or malicious. "The rule in Virginia as to the recovery of counsel fees as damages is well established in Burruss, ...*Parsons* . . . *Wisecarver*, ...and *Morgan v. Haley*, [58 S.E. 564 (Va. 1907)], wherein it is held that *except where the injury is wanton or malicious and exemplary damages are recoverable, the allowance of fees paid counsel for defending the original proceedings is not proper.*" *Morgan v. Kemp*, 186 S.E. 99, 106 (Va. 1936) (emphasis added); *Burruss*, 26 S.E. at 878 ("But if the injury was not wanton or malicious, and exemplary damages are not recoverable, the allowance of counsel fees is improper."). *See also Sperry Rand Corp. v. A-T-O, Inc.*, 447 F.2d 1387, 1394 (4th Cir. 1971) (same).

Having explored the landscape of the Virginia rule, the question now becomes whether this case, or any aspect of it, fits within that rule.

b. Attorneys' Fees As Injury For Actual Fraud

It has been observed that, in assessing whether attorneys' fees in an underlying suit can be recovered in an action for fraud, "[t]he rule that attorneys' fees are not recoverable (absent contractual provision or statutory authority), while superficially a bar, is not really applicable." Robert L. Dunn, *Recovery of*

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[10] Infineon argues that the Supreme Court of Virginia allowed attorneys' fees to be recovered as damages for fraud in *Prospect Dev. Co., Inc. v. Bershader*, 515 S.E.2d 291 (Va. 1999). While *Bershader* mentions other Virginia decisions which allowed attorney fees to be recovered as an element of damages, *see e.g. Owen*, 277 S.E.2d at 192, *Burruss*, 26 S.E. 875 at 878 and *Bolton*, 26 S.E. 847 at 850, *Bershader* is more properly regarded as a case allowing fees to be awarded to a prevailing party.

Damages for Fraud, § 4.13, pgs. 200-01 (Lawpress 1995). That statement is followed by the explanation that, when a defendant's fraudulent misrepresentations force a party to prosecute or defend other litigation, attorneys' fees incurred in that other litigation are "recoverable when they are proximately caused by a misrepresentation." *Id. See also* 22 Am. Jur. 2d Damages § 617 ("Also, an exception to the general rule exists if the wrongful action of the defendant has placed the plaintiff in such a position that it is necessary to incur legal expenses to protect his interest."); 44 A.L.R. 4th 776 § 2(a) (1986) ("Courts have allowed recovery of attorneys' fees under a distinct exception permitting the successful party in a fraud action to recover from the losing party the attorneys' fees incurred by the successful party in prior litigation or claims involving third parties, which litigation or claims were proximately caused by the fraud perpetrated on the successful party.") (emphasis added).

Numerous jurisdictions have subscribed to this principle by allowing a party to recover attorneys' fees expended in a previous litigation when that litigation was proximately caused by the defendant's fraud. The decisions, however, deal primarily with previous litigation between the plaintiff and a *third* party. See *Feit v. Donahue*, 826 P.2d 407 (Colo. Ct. App. 1992) (plaintiff in a real estate fraud case allowed to recover attorneys' fees incurred in attempting to obtain a variance when the seller concealed the fact that a variance was required); *Fagerberg v. LeBlanc*, 416 N.W.2d 438 (Mich. Ct. App. 1987) (allowing recovery of attorneys' and surveyors' fees where seller fraudulent misrepresented the boundaries of the land); *Gray v. Don Miller & Assoc., Inc.*, 674 P.2d 253 (Cal. 1984) (plaintiff allowed to recover attorneys' fees incurred in prior specific performance suit on the sale of a home when real estate broker falsely represented that an offer had been accepted by the sellers on the home); *Forrester v. State Bank*, 363 N.E.2d 904 (1977) (allowing a plaintiff in a fraud action to recover

attorneys' fees incurred in a prior bankruptcy proceeding against a debtor when the defendant bank fraudulently misrepresented the assets of the debtor); *Turner v. Zip Motors, Inc.*, 65 N.W.2d 427 (Iowa 1954) (allowing recovery of attorneys' fees in a prior action for replevin brought by third party and caused by the defendant's agent's conversion of an automobile).

Nevertheless, the fundamental premise upon which attorneys' fees were allowed in those cases is closely akin to the rationale, which is followed in Virginia, for allowing attorneys' fees to be an element of damage or injury in certain intentional torts: when a party's intentionally tortious act forces the other party necessarily to incur attorneys' fees as a direct consequence of that act, the party should be able to recover the attorneys' fees consequentially expended. Whether that underlying action was between the plaintiff and the tortfeasor or the plaintiff and a third party, the underlying rationale remains the same.

In Virginia, in order to establish a cognizable claim for actual fraud, the plaintiff must establish some type of injury. One seeking to recover for fraud must show that the act resulted "in some *loss, damage, detriment or injury* to him." *Lloyd v. Smith*, 142 S.E. 363, 367 (Va. 1928) (emphasis added). Infineon has proved the injury component of its actual fraud claim by demonstrating that: (1) it sustained an injury by incurring attorneys' fees and (2) the need to incur those attorneys' fees was proximately caused by Rambus' fraud.

This case began when Rambus asserted four patents against Infineon's JEDEC- compliant SDRAM and DDR SDRAM products. Infineon was therefore forced to employ attorneys in the investigation of those claims of infringement and in possible defense thereof. Further, the record is: (1) that Infineon had designed its products to comply with the JEDEC standard and built manufacturing lines in Germany and the United States to make those products; and (2) that, if Infineon was to continue to sell those products, it had no choice but to defend the

infringement action which was part and parcel of Rambus' fraud.[11] After the Court granted judgment as a matter of law in Infineon's favor on the infringement claims (at the end of Rambus' case-in-chief), Infineon argued that it was nevertheless harmed by Rambus' fraudulent scheme because, even though its products had been determined not to infringe the patents-in-suit, Infineon, had incurred considerable expense in analyzing and outlining a defense to those patent claims.[12]

Thus, Infineon proved that it sustained pecuniary loss as a result of Rambus' intentionally fraudulent behavior at JEDEC. Indeed, the defense of the patent suit was "a direct and necessary consequence," *Hiss*, 112 S.E.2d at 876, of Rambus' plan to attend JEDEC, remain silent about its patent applications, obtain additional patent claims that covered JEDEC technology, and then assert those patents against JEDEC members whose products conformed to the JEDEC standard in order to obtain their assent to license agreements.

The result reached here comports with the conclusion reached by the Seventh Circuit in *Roboserve, Inc. v. Kato Kagaku Co., Ltd.*, 78 F.3d 266 (7th Cir. 1996), *cert. denied* 519 U.S. 928, (1996) under similar facts in a fraud case. Applying Illinois law, the *Roboserve* court explained that "[c]ompensatory damages for fraud are intended to compensate for any injury which is the direct and natural consequence of the

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[11] Indeed, Rambus terminated settlement discussions between it and Infineon by filing this action, which Rambus chose to do, not because the discussions were failing, but because Rambus wanted to litigate in this forum and feared that Infineon might sue it in California where the docket proceeds at a slower pace.

[12] Although Infineon put forth evidence regarding the amount of attorneys' fees paid to the law firm of Slater & Matsil in connection with the defense of the patent infringement suit, the Court struck that evidence because Infineon failed to prove that those fees were "reasonable in amount and reasonably incurred." *Owen*, 277 S.E.2d at 192. Nonetheless, the undisputed record shows that Infineon incurred attorneys' fees in an amount not proved, to defend the last stage of the Rambus fraud found by the jury.

plaintiff's acting on the faith of defendant's representations." *Id.* at 273-74 (internal quotations omitted). Thus, the plaintiff could recover its "out-of-pocket" expenses, including attorneys' fees expended in reliance on that misrepresentation. *Id.* at 274. Because the defendant fraudulently led the plaintiff to believe that it would be awarded a contract to provide services to a hotel, the plaintiff could recover attorneys' fees expended in preparing new proposals for, and in conducting negotiations to provide, those services. *Id.*[13]

More importantly, it is entirely appropriate, under settled precepts of Virginia law, to allow Infineon to claim attorneys' fees as its injury on the actual fraud claim because the jury found that Rambus had committed the fraud "maliciously or wantonly or oppressively" and awarded $3.5 million in punitive damages on Infineon's actual fraud claim.[14] Indeed, a finding of that sort supplied the raison d'etre for sustaining an award of attorneys' fees between the same parties in a malicious prosecution or false imprisonment case under Virginia law. Thus, the award of attorneys' fees is appropriate in the present fraud action because "the injury is wanton or malicious and exemplary damages are recoverable." *Kemp*, 186 S.E. at 105. *See also Sperry Rand*, 447 F.2d at 1393.

To hold otherwise would effect an inequitable result. Contrary to Rambus' argument, Infineon was not insulated from the fraud injury merely because Infineon prevailed on the patent infringement aspect of this action. Infineon escaped one possible harm which could have resulted from the fraud—namely, being found liable for infringing the patents-in-suit after having made a substantial investment in research and

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[13] Similarly, in *Advantor Capital Corp. v. Yeary*, 136 F.3d 1259 (10th Cir. 1998), in an action for fraud and abuse of process, the Tenth Circuit allowed a plaintiff to recover its attorneys' fees incurred in a prior litigation.

[14] Pursuant to Va. Code § 8.01-38.1, the Court reduced that amount to $350,000.00.

development of its products and setting up manufacturing facilities to produce the allegedly infringing computer memory chip.[15] Faced with that risk of harm, Infineon had no viable option other than to have a law firm analyze the infringement claims made by Rambus before the litigation began and to help structure a defense to the litigation once Rambus instituted this action. Further efforts to reach a business compromise were essentially foreclosed when Rambus commenced infringement litigation here and in Germany. Yet, the attorneys' fees would not have been sustained (and the current dispute avoided entirely) if Rambus had made the disclosures required by the JEDEC policy because the JEDEC committee could have revised the standard, Infineon could have designed its products differently or Infineon could have negotiated reasonable royalty rates from Rambus *before* it had invested in the set up of its manufacturing lines (a factor which of course, injects strong adverse leverage into the negotiating equation).

To accept the contention that Infineon has suffered no harm simply because it prevailed on Rambus' patent infringement action would be to allow Rambus to secure a windfall from the fraud that the jury found it had committed.

c. The *Noerr-Pennington Doctrine*

Rambus contends that Infineon's attorneys' fees cannot be recovered in an action for fraud because the *Noerr-Pennington* doctrine protects a litigant's First Amendment right to prosecute lawsuits without fear of being required to pay an adversary's litigation costs. *See Eastern R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *United Mine*

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[15] Infineon remains exposed to possible claims of infringement of other Rambus patents, the concealment of the applications for which were instrumental to the ultimate content of the JEDEC SDRAM standard. That exposure, too, is an injury attributable to the fraud which is to be remedied by injunction.

Workers of America v. Pennington, 381 U.S. 657 (1965). The doctrine, which has its foundation in the First Amendment, protects the rights of persons to petition the government legislatively, judicially or administratively because such action is constitutionally protected speech apart from the motivation behind it. *Id.*

Rambus raises this argument too late. "[T]he *Noerr-Pennington* doctrine should be raised as an affirmative defense." *Bayou Fleet, Inc. v. Alexander*, 234 F.3d 852, 860 (5th Cir. 2000), *cert. denied* ____U.S. ____, 121 S.Ct. 1228 (2001). *See also Acoustic Systems, Inc. v. Wenger Corp.*, 207 F.3d 287 (5th Cir. 2000) (same). "Generally, a party's failure to raise an affirmative defense in its first responsive pleading results in waiver." *Bayou Fleet*, 234 F.3d at 860. However, there are limited exceptions to this rule when the failure to raise a defense would not result in unfair surprise or prejudice to the other party.

Rambus' failure to plead the *Noerr-Pennington* doctrine as an affirmative defense forecloses consideration of that defense now because to consider it at this late stage would be unfairly prejudicial to Infineon and therefore the issue will not be considered.[16]

d. Conclusion

Attorneys' fees incurred as a direct result of the defendant's fraudulent conduct may be recovered in an action for actual fraud; therefore the motion for JMOL on Count 10 on that ground is denied. Having concluded that each asserted infirmity in the actual fraud verdict is meritless, Rambus' motion for JMOL on Count 10 as to the JEDEC standard-setting process for SDRAM is denied.

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[16] Rambus first raised the issue when it was faced with a motion for judgment as a matter of law near the end of a two week trial. This untimely assertion was unfair to Infineon and the Court refused to consider it then as well.

D. The Actual Fraud Verdict As To Rambus' Conduct Respecting The JEDEC DDR SDRAMs Standard-Setting Process

Rambus challenges the jury's finding of liability for fraud relating to the conduct of Rambus in the JEDEC DDR SDRAM standard-setting process because, according to Rambus, even if it had a duty to disclose, that duty was not triggered in connection with the DDR SDRAM standard-setting until after Rambus left JEDEC. For that reason, Rambus contends that the finding of fraud as to its conduct in the DDR SDRAM standard-setting process is unsupported by the evidence. As explained below, that contention is well-founded.

To begin, it is necessary to recall that Rambus attended its last JEDEC meeting on December 6, 1995 and that Rambus formally withdrew from JEDEC by a letter dated June 17, 1996. However, JEDEC Committee JC-42.3 did not begin working on the standard for DDR SDRAM until December 1996. In 1998, Infineon first began creating the design for the DDR SDRAM and, in 2000, began manufacturing its DDR SDRAM. JEDEC published the DDR SDRAM standard in 2000.

Whether Rambus had a duty to disclose patents and patent applications relating to the DDR SDRAMs turns on the record respecting *when* Committee JC- 42.3 first began work on the DDR SDRAM standard. The parties agree that the DDR SDRAM standard-setting did not formally appear in JEDEC's item log of proposed standards until December 1996. The parties, however, disagree as to when the duty to disclose was triggered. Rambus argues that the duty did not arise until December 1996 when the standard was formally considered by the committee. Infineon, on the other hand, argues that the duty to disclose was triggered earlier than 1996 because certain "concepts", which ultimately made their way into the DDR SDRAM standard, were discussed while Rambus was a member of JEDEC. Specifically, Infineon contends that Committee JC-42.3 considered certain technologies, such as

dual edge clocking and on-chip PLL/DLL (delay lock loop), as early as 1992 and that Rambus committed fraud as to the DDR SDRAM because these technologies were ultimately incorporated into the DDR SDRAM standard.

There was evidence to support Infineon's contention that JEDEC members were obligated to make the requisite disclosure when certain technologies were discussed at JEDEC meetings from 1992 through early 1996. However, the Chairman of Committee JC-42.3, Gordon Kelley, testified that the only formal time that the duty to disclose was triggered was during the balloting of a proposed standard, in which a member was asked to declare whether or not it had knowledge of any patents or patent applications. Kelley went on to add, however, that he routinely disclosed patents held by his employer, IBM, if he knew, at the time a proposal was made, that IBM had a patent relating to the new proposal. Yet, Kelley did not testify whether this was his personal practice or an action taken as a result of the JEDEC disclosure policy. Nor did Kelley testify whether the duty to disclose during a presentation on one standard carried over to another standard.

At trial, and during the post-trial motions, Infineon relied primarily on the testimony of Reese Brown, a consultant to JEDEC, to establish the existence of a duty to disclose during the time at issue. Brown testified about several presentations relating to dual edge clocking and PLL/DLL that were made at JEDEC from 1991 to 1996. He stated that, in his view, a JEDEC member would have had a duty to disclose any patent or patent application relating to those dual edge clocking or PLL/DLL presentations. However, each of the discussions to which Brown referred took place in relation to the *SDRAM* standardization effort, not to the *DDR SDRAM* standard. Significantly, Brown also testified that the disclosure duty was triggered only if the "material is described as part of a legitimate proposal that's aimed at a standard." Infineon presented no evidence demonstrating that the dual edge

clocking and PLL/DLL technology presentations during the period 1991 through early 1996 were "aimed at" a DDR SDRAM standard. To the extent that Brown's testimony establishes that patents or applications relating to these technologies should have been disclosed, the only standard to which the presentations could have been made was the SDRAM standard because it was the only standard under consideration at the time.

Furthermore, Rambus showed, through the testimony of JEDEC representatives, that technology presentations could be made for a variety reasons—sometimes they would be made with the aim of standardizing the technology and other times they would be presented simply for informational purposes only. If the technology was presented for informational purposes only, the presentation would not receive an item number from the committee. Also, absent a ministerial mistake, presentations that were made with the goal of eventually becoming incorporated into a standard were given item numbers. The presentations in 1991-1996 regarding dual edge clocking and PLL/DLL were not given item numbers to become part of the DDR SDRAM standard.

Infineon takes the view that the particular name of a standard should not be dispositive in determining when the committee began consideration of a technology. In its view, JEDEC standardization is a continuing effort, with each technology serving as a building block for later technologies. Those contentions have merit. However, well-taken or not, those points do not mean that JEDEC standard-setting for DDR SDRAMs was underway when the technology presentations at issue were made.

Considering the record as a whole, Infineon has failed to prove, by clear and convincing evidence, that, before the DDR SDRAM standard-setting process actually began, Rambus had a duty to disclose. Further, Rambus was no longer a member of JEDEC when that process began. The evidence on which

Infineon pins its contention that the disclosure obligation existed before the standard- setting process began does not qualify as clear and convincing. In fact, Infineon relies almost exclusively on the testimony of Reese Brown, and, although Brown testified that, in his view, a member had a duty to disclose at each of the technology presentations, the duty to which he opined is completely untethered to any specific proposal for a DDR SDRAM standard pending before the JEDEC committee at the time. Also, at the time of each of those presentations, the only standard under consideration was the SDRAM standard. That, considered in perspective of Brown's testimony that the duty to disclose existed only if the "material is described as part of a legitimate proposal that's aimed at a standard," makes the evidence too insubstantial to be clear and convincing.

Thus, although Infineon proved that certain technology features discussed during the SDRAM standard-setting process ultimately found their way into the DDR SDRAM standard and that those technologies were discussed at JEDEC meetings while Rambus was present, Infineon did not prove that those discussions were tied to a standard-setting effort for the DDR SDRAM. The resulting evidentiary void requires the conclusion that, there being no duty disclose shown, Rambus is entitled to JMOL on Count 10 insofar as it involves the assertion of fraud in respect of the DDR SDRAM standard-setting process.

E. Punitive Damages

In Virginia, an award of punitive damages may not be made absent an award of compensatory or nominal damages. *Valley Acceptance Corp. v. Glasby*, 337 S.E.2d 291, 297 (Va. 1985). Rambus contends that the punitive damage award must be vacated, because, as a matter of law, nominal damages cannot be recovered for fraud under Virginia law.[17]

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[17] Rambus does not dispute that nominal damages can be the basis for

"The usual remedy in an action for fraud is to restore the defrauded party to the position he held prior to the fraud." *Murray v. Hadid*, 385 S.E.2d 898, 904 (Va. 1989). In this action, because the Court granted JMOL in favor of Infineon on the infringement claim, and because the Court struck Infineon's evidence of the amount of the attorneys' fees as lacking in the evidentiary predicate of reasonableness, the actual fraud claim was submitted to the jury for a finding of nominal damages only. The jury returned an award of $1.00 for the actual fraud.

It appears that Virginia courts have not directly addressed the issue whether nominal damages can support a claim of fraud. Without direct guidance from Virginia courts, a district court must predict what course the highest court of the state would choose in this instance. *See Byelick v. Vivadelli*, 79 F. Supp. 2d 610, 624 (E.D. Va. 1999). "The federal court may base its prediction on 'canons of construction, restatements of the law, treatises, recent pronouncements of general rules or policies by the state's highest court, well considered dicta, and the state's trial court decisions.'" *Id.* (quoting *Wells v. Liddy*, 186 F.3d 505, 528 (4th Cir. 1999)). Additionally, the court may consider any relevant law review articles and cases from other jurisdictions on the subject. *Id.*

As a threshold matter, it is worth noting that "[t]he standard texts and many cases state flatly that nominal damages are not recoverable and that actual damages are a necessary element of a fraud claim." Dunn, *Recovery of Damages for Fraud*, § 6.1, pg. 254. *See also* Prosser & Keeton, *Torts* § 110 (5th Ed. 1984) ("Nominal damages are not awarded in deceit . . ."). [18] Notwithstanding these general pronouncements, many courts have demonstrated an increasing willingness to allow fraud

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punitive damages if nominal damages are properly awarded on a particular claim.

[18] Prosser & Keeton also state, however, that nominal damages may "be awarded where there is proof that actual damage has occurred, but no proof as to the amount." *Id.* at n. 2.

plaintiffs to recover only nominal damages for fraud. *See e.g. Mercer v. Davis & Berryman Intn'l, Inc.*, 834 F.2d 922, 929 (11th Cir. 1987) (applying Alabama law); *Valley Prop. Inc. v. Strahan*, 565 So.2d 571, 581 (Ala. 1990); *Greater Coral Springs Realty, Inc. v. Century 21 Real Estate of Florida, Inc.*, 412 So.2d 940, 941 (Fla. App. 1982); *Giammanco v. Giammanco*, 625 N.E. 2d 990, 997 (Ill. App. Ct. 1993), *appeal denied*, 638 N.E. 2d 1115 (Ill. 1994); *Nappe v. Anschelewitz, Barr, Ansell & Bonello*, 477 A.2d 1224 (N.J. 1984); *Reinah Dev. Corp. v. Kaaterskill Hotel Corp.*, 59 N.Y.2d 482 (1983); *Beavers v. Lamplighters Realty, Inc.*, 556 P.2d 1328, 1333 (Okla. Ct. App.1976); *Sands v. Forrest*, 434 A.2d 122, 124 (Pa. Super. Ct. 1981).

The Supreme Court of Virginia has held that:

> [a]n award of *nominal damages* is appropriate where there is a *legal right to be vindicated against an invasion* that has produced no actual, present loss of any kind or where, from the nature of the case, *some injury has been done but the proof fails to show the amount.*

Town & Country Props., Inc. v. Riggins, 457 S.E.2d 356, 365 (Va. 1995) (emphasis added). *See also Nappe v. Anschelewitz, Barr, Ansell, & Bonello*, 477 A.2d 1224 (N.J. 1984) ("The award of nominal damages is made as a judicial declaration that the plaintiff's rights have been violated") (quoting C. McCormick, *Handbook on the Law of Damages* § 20, at 85 (1935)). "Nominal damages are properly awarded when, although the claimant shows significant harm, its amount is not proved with sufficient certainty to entitle him to an award of compensatory damages." Restatement of Torts (Second) § 907, cmt. c.

Analysis of the issue begins with the recollection that, in order to prove a claim for actual fraud, the complaining party must show damage caused by the fraud. *See Bryant v.*

Peckinpaugh, 400 S.E.2d 201, 203 (Va. 1991); *Winn v. Aleda Constr. Co.*, 315 S.E.2d 193, 195 (Va. 1984). The key inquiry presented by Rambus' argument is: what constitutes "damage" to a fraud plaintiff.

Rambus, relying on *Lloyd v. Smith*, 142 S.E. 363 (Va. 1928), *Community Bank v. Wright*, 267 S.E.2d 158 (Va. 1980) and *Murray v. Hadid*, 385 S.E.2d 898 (Va. 1989), equates the term "damage" to the term "damages" and argues that, absent a showing of compensable, pecuniary damages, the damage element of a fraud claim fails. To support this view, Rambus extracts a few quotes from these decisions and argues that these snibbets of text show that Virginia requires a plaintiff to prove compensatory damages, or "pecuniary loss," in order to recover for fraud. To the contrary, when read in their entirety, the decisions on which Rambus relies stand for the proposition that the plaintiff must sustain an *injury* in order to recover for fraud. The argument pressed by Rambus blurs the distinction between the term "damages" and the term "damage." "'Damages' means a sum of money awarded to a person injured by the tort of another." Restatement of Torts (Second) § 902. Thus, "[d]amages flow from an injury." *Id.* at § 902 cmt. c. In contrast, "damage" equates with an "injury" which is "the invasion of any legally protected interest of another." *Id.* at § 7. In order to prevail on a claim for fraud, Virginia law requires not a showing of damages (although often the "injury" consists of "damages"), but rather a showing of an injury caused by detrimental reliance on the fraud.

In *Lloyd*, the Supreme Court of Virginia began with the fundamental observation that "bare allegations of fraud will not of themselves support an action for damages—the facts showing the fraud and the resulting damage must be alleged." *Id.* at 367. However, the Court also made clear that "[n]either fraud nor damage can be presumed, and the allegation of a mere purpose to commit fraud cannot be made the basis of an action. The purpose must be consummated, *the injury inflicted*." *Id.*

Thus, a fraudulent intent must be accompanied by an injurious act. *Id.*

Rambus, however, focuses only those portions of the opinion which discuss the well-accepted notion that pecuniary damages may support a cause of action for fraud as well. *See id.* ("Fraud without resulting pecuniary damage is not a ground for the exercise of remedial jurisdiction."). The decision, when considered in full, stands for the elemental proposition that fraud must be accompanied by the infliction of an injury and that injury can be manifested in various forms. For example, far from requiring a showing of compensatory damages, *Lloyd* states that "the party asking for [relief from fraud] must have been damaged *or misled to his own hurt*." *Id.* (emphasis added). Admittedly, the next passage confuses the issue somewhat because the Court quotes an equity treatise for the proposition that "[t]he [defrauded] party must suffer *some pecuniary loss or injury* ..." *Id.* (emphasis added). That text, however, is within a discussion about materiality of an affirmative misrepresentation and is not really a circumscribing limit on the nature of fraud injury. In the end, *Lloyd* articulates the fundamental precepts: (a) that *"a fraud which causes no injury is not legally cognizable,"* and (b) that, therefore, the complaining party must show "some loss, damage, detriment, or injury to him." *Id.* (emphasis added). *See also Wilson v. Carpenter's Adm'r*, 21 S.E. 243, 245 (Va. 1895) ("The court does not inquire with any care into the extent of the prejudice. It is sufficient if the party misled has been very slightly prejudiced—if the amount is at all appreciable."). Thus, Lloyd teaches that the damage component of a fraud claim requires the demonstration of injury.

Likewise, *Community Bank v. Wright*, 267 S.E.2d 158, 175 (Va. 1980) begins with the observation that "[a]n allegation of fraud in the abstract does not give rise to a cause of action; it must be accompanied by allegation and proof of damage." (citing *Lloyd*, 142 S.E. at 367). *Community Bank*, however,

goes on to say that "the rule as to what constitutes damage, in any case, may broadly be stated to be that there is no damage where the position of the complaining party is no worse than it would be had the alleged fraud not been committed." *Id.* (quoting *Cooper v. Wesco Bldrs.*, 281 P.2d 669, 672 (1955)). Thus, if the complaining party can show that he has been put in a worse position, even if that injury is not quantified in terms of dollars, a claim for fraud can be supported.

Rambus next points to *Murray v. Hadid*, 385 S.E.2d 898 (Va. 1989) to argue that proof of pecuniary damages must be shown to establish a claim for fraud under Virginia law. It is true, as Rambus states, that *Murray* contains the statement that: "in order to recover under a cause of action for fraud, a plaintiff must prove *damages* which are caused by his detrimental reliance on a defendant's material misrepresentation." *Id.* at 903 (emphasis added). Although that statement seems to require proof of pecuniary damages, the ultimate holding in *Murray* is in no way inconsistent with the idea that "damage" for purposes of fraud means injury. The Court denied recovery in *Murray* because the plaintiffs could not show that they were in a worse position due to the fraud: "In the present action, the Murrays did not actually lose anything as a result of Hadid's fraud. *They are in the same position in which they were prior to the fraud.*" *Id.* at 904 (emphasis added). That certainly does not distill into the rule that pecuniary damages are the *sine qua non* of a valid fraud claim.

Additionally, in a recent opinion, the Supreme Court of Virginia, while not directly addressing the issue, allowed a finding of actual fraud to stand while vacating, in its entirety, the only award of compensatory damages given by the jury to compensate for the fraud. In *Bershader*, 515 S.E.2d at 300, the Court set aside the award of compensatory damages because the trial court erred in measuring the type of damages available for fraud in that case. Nevertheless, the Court concluded that the plaintiffs had proven by clear and convincing evidence the

elements necessary for actual and constructive fraud. *Id.* at 297. Considering that no damages (other than the vacated compensatory damages)[19] were recited as a basis for the fraud findings and that the fraud findings were affirmed, as was equitable relief in the form of a negative easement, it seems rather clear that Virginia law requires that the "damage" element of a fraud claim necessitates proof of an injury which can, but need not, be pecuniary "damages."

Here, Infineon certainly is not in the same position as it was before the fraud. Because Rambus violated JEDEC's disclosure policy, the JEDEC committee adopted a standard which potentially infringed Rambus' patents. Infineon designed new products that complied with the JEDEC standard, built new manufacturing facilities and began to manufacture those products. Thus, when Rambus asserted its patents against Infineon, Infineon was in a worse position than it would have been had there been no fraud. If Rambus had disclosed its patents, the JEDEC standard may have been different, Infineon could have designed around Rambus' asserted patent rights or Infineon might have been able to negotiate a reasonable royalty while it was not under the leverage of having to protect a vast investment in new products and a new plant (a factor which severely hampers any free negotiation). Instead, because Rambus remained silent, Infineon was put to the choice of knuckling under to the exceedingly high royalty rates being demanded by Rambus or defending itself against the patent infringement suit. Infineon understandably chose to defend its JEDEC compliant products against charges of infringement. Therefore, it is in a materially different position than it would have been if it were not for the fraud committed by Rambus. As a result, it paid attorneys' fees to Slater & Matsil to analyze

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[19] The Supreme Court of Virginia sustained an award of attorneys' fees but, as Rambus argues elsewhere in its JMOL motion and as this Court has found, that award was not a component of the fraud injury claimed by the plaintiff; it was a prevailing party award.

the issues of infringement and to help outline a defense in perspective of that analysis. This is an injury, as to which this proof fails to show the amount, but it is an injury and may be addressed with an award of nominal damages. *See Town & Country Props., Inc. v. Riggins*, 457 S.E.2d 356, 365 (Va. 1995); Prosser & Keeton, *Torts*, § 110 n. 2 (5th ed 1984).[20]

Finally, there are strong policy reasons for allowing an award of nominal damages to constitute proof of injury in support of a claim for actual fraud, which, of course, is an intentional tort. In the well-reasoned opinion of *Nappe v. Anschelewitz, Barr, Ansell & Bonello*, 477 A.2d 1224 (N.J. 1984), the Supreme Court of New Jersey cogently explains the ancestry of the tort of fraud and why it is appropriate to allow nominal damages to support this claim. The *Nappe* court observed that "whether [actual] damage is essential to the existence of a cause of action for a particular tort may depend very largely upon its ancestry in terms of old procedure." *Id.* at 1229 (citing W. Prosser, *Handbook on the Law of Torts* § 7, at 30) (4th Ed. 1971). In *Nappe*, the court gives a detailed historical background of the difference between common law writs of trespass and trespass on the case. Trespass "was considered quasi-criminal in nature and was the remedy for forcible, direct, and immediate injuries to persons or property." *Id.* at 1228. The plaintiff was not required to prove actual damage "because invasion of the plaintiff's rights was regarded as the tort in itself." *Id.* at 1228-29 (citing Prosser, at § 7 pg. 29).

Conversely, trespass on the case developed as a supplemental remedy to allow a plaintiff recover for injuries occurring indirectly:

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[20] Moreover, as explained in a separate opinion, the risk of future litigation (with the attendant enormous expense) is another consequence of the fraud so substantial that Infineon is entitled to an injunction to protect against further infringement suits by Rambus. The fraud also produced that inquiry which warrants the equitable relief of injunction.

> The classic illustration of the difference involves that of a log thrown onto a highway. If a person were struck by the log, trespass would lie. If he fell over the log as it lay on the road, the action would be on the case.

Id. at 1229. Trespass on the case actions normally required proof of actual damages. *Id.*

While the differences between the two forms of action have largely been eroded, a distinction has remained as to the requirement of damages. *Id.* There are "case" actions which still require proof of actual damages, such as slander of title, disparagement of goods, and slander that is not per se; however, other "case" actions have abandoned the common law distinction and allow recovery even in the absence of proof of compensatory damages, such as libel, slander per se, nuisance and malicious prosecution. *Id.* (citing C. McCormick, *Handbook on the Law of Damages* § 22, at 89 (1935)).

Having reviewed the rather arbitrary underpinnings of the requirements of common law, the New Jersey Supreme Court chose to modify the common law rules because they were no longer "fair and equitable," *id.*:

> Although distinctions based on common-law writs may once have been appropriate, the requirement of actual damage to sustain a cause of action for intentional torts no longer serves a useful purpose, at least where a victim of an intentional wrong has suffered some loss, detriment, or injury but is unable to prove that he is entitled to compensatory damages. ***His rights have been invaded and he should be entitled to vindication in an award of nominal damages. Indeed, it is difficult to justify permitting nominal damages in a trespass action and not in a case of a wilful and malicious intentional tort.*** We hold, therefore, that

> compensatory damages are not an essential element of an intentional tort committed wilfully and without justification *when there is some loss, detriment or injury*, and that nominal damages may be awarded in such cases in the absence of compensatory damages.

Id. at 1229-30 (emphasis added and footnotes omitted).

As to the award of nominal damages for fraud, the *Nappe* court explained that, in addition to proving damage, the plaintiff must demonstrate scienter—that is "knowledge of the falsity of the representation with the intent that the other party rely thereon." *Id.* at 1232. "Such fraudulent conduct constitutes unfair dealing whether or not actual damages are shown." *Id.* Similarly, the *Nappe* court noted that nominal damages are particularly appropriate for intentional torts because they allow exemplary damages to be recovered. *Id.* ("If no compensable harm is done even though the defendant's conduct is very wrongful, the normal admonitory function of tort law is not brought into play unless exemplary damages are assessed.") (quoting Note, "Exemplary Damages in the Law of Torts," 70 Harv. L. Rev., 517, 529 (1957)).

The court in *Nappe*, thus, joined the courts of other states that "have refused to be constrained by the outmoded common-law requirement [of actual damages] and have sustained actions for legal fraud when the plaintiff's injury was not compensable." *Id.* at 1232-33 (collecting cases). Furthermore, some courts allow punitive damages to be awarded in fraud actions when there is a showing of injury, even without an award of compensatory damages. *Id.* at 1233 (collecting cases).

The *Nappe* court ultimately concluded that "[e]ven if the person relying on the falsehood were unable to establish actual damages, he should be entitled to vindicate his rights through an award of nominal damages and in appropriate cases to

punish the defendant through an award of punitive damages." *Id.* at 1232. *Accord Commonwealth of Ky. Dep't of Agric. v. Vinson*, 30 S.W.3d 162, 166 (Ky. 2000) ("compensatory damages are not an essential element of an intentional tort committed wilfully and without justification. The mere fact that no compensatory damages were awarded to [the plaintiffs] does not mean that they did not have compensable injuries."). *But see Olson v. Fraase*, 421 N.W.2d 820, 827 (N.D. 1988) (disagreeing with *Nappe* and holding that nominal damages cannot be recovered for fraud because fraud requires a showing of damages).

Here, the jury's verdict leaves no doubt that Rambus committed intentional fraud, with the goal of inducing the JEDEC committee to create a standard which used Rambus' patented technology so that Rambus could claim a royalty on the sales of products made to the specifications of the standard. Rambus also intended to sue to enforce these patents, believing that the cost of litigation and the risk-of-loss factor would pressure manufacturers into accepting licenses.[21] Infineon has suffered an injury as a result of that fraud, namely that it has been forced to litigate the patent infringement suit after having expended considerable funds to create its products and manufacturing lines. The injury has been proven, though the precise amount has not. Nominal damages are appropriate here, and they are sufficient to constitute an injury and to support punitive damages.

Thus, the motion for JMOL on the award of punitive damages in Count 10 is denied.

F. The Statute of Limitations

Rambus next argues that JMOL should be granted because the jury erroneously concluded that Infineon's claims were not

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[21] The evidence at trial showed that several manufacturers (representing about 40% of the market) opted for that course.

barred by the statute of limitations. Section 8.01-249(1) provides that a cause of action accrues:

> [i]n actions for fraud or mistake and in actions for rescission of contract for undue influence, when such fraud, mistake, or undue influence is discovered or *by the exercise of due diligence reasonably should have been discovered* . . .

(emphasis added). An action for fraud must be brought within two years from the accrual of the cause of action. Va. Code § 8.01-243.

In this action, Infineon filed its fraud claim in January 2001. Therefore, in order to establish that Infineon's claim is barred by the statute of limitations, Rambus must prove, by the preponderance of the evidence, that Infineon was on inquiry notice of its fraud claim as of January 1999. Rambus argues that Infineon was on inquiry notice at least as late as 1997 as to whether it had a claim against Rambus for violating a JEDEC related duty. Rambus relies, in large part, on the same evidence presented to support its claim that Infineon's reliance on the omissions at the JEDEC meetings was not reasonable.

The jury found that Rambus had not proved, by a preponderance of the evidence, that Infineon had reason to know of, or should have discovered, Rambus' violations of the JEDEC disclosure policy or of Rambus' efforts to draft claims covering JEDEC's standardization work. Viewing the evidence in the light most favorable to Infineon, the non-movant, the evidence shows that, although Infineon expressed concerns about the scope of Rambus' patent rights, the deliberate silence of Rambus at JEDEC committee meetings and its disclosure of the '703 patent (a RDRAM patent) led Infineon to believe that Rambus' technology did not cover JEDEC's SDRAM standard. Furthermore, although Rambus repeatedly points to its withdrawal letter from JEDEC as proof of inquiry notice, there was no evidence presented at trial indicating that Infineon ever

saw that letter or that Infineon should have known that Rambus' patents related to SDRAMs. In fact, the evidence showed that Infineon had seen neither the letter nor the list of patents until after this action started.

Rambus had the burden to prove, by a preponderance of the evidence, that, before January 1999, Infineon knew or should have known of the facts giving rise to its fraud claim. Rambus failed to do so. The evidence presented at trial permitted the jury reasonably to conclude (as it did) that Infineon did not know of the fraud, nor should it have suspected the fraud, before Rambus asserted its patents against Infineon in the summer of 2000. Hence, the motion for JMOL on that ground is denied.

G. Jury Instruction on *Kingsdown*

"There is no dispute among the circuits, nor in [Federal Circuit] jurisprudence, that a judgment should be altered 'because of a mistake in jury instructions only if the error was prejudicial' and that we must 'look to the entire jury charge . . . to determine whether the instructions fairly stated the legal principles to be applied by the jury.'" *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 853 (Fed. Cir. 1991) (collecting circuit court cases, including *Wellington v. Daniels*, 717 F.2d 932, 938 (4th Cir. 1983)). "'District courts are necessarily vested with a great deal of discretion in constructing the specific form and content of jury instructions,' and they are not required to 'accept all the suggested instructions offered by the parties.'" *Emergency One, Inc. v. American FireEagle, Ltd.*, 228 F.3d 531, 538 (4th Cir. 2000) (quoting *Hardin v. Ski Venture, Inc.*, 50 F.3d 1291, 1293-94 (4th Cir. 1995)). "So long as the charge is accurate on the law and does not confuse or mislead the jury, it is not erroneous." *Id.* (quoting *Hardin*, 50 F.3d at 1294). When a party alleges that jury instructions are incorrect because the court failed to give a requested instruction, the complaining party faces "a two-fold task": it "must both prove the jury instructions read in their entirety were

incorrect or incomplete as given and then demonstrate that the suggested instruction could have cured the error." *Biodex*, 946 F.2d at 853.

Rambus charges that the Court erred by failing to give its requested jury instruction based on *Kingsdown Medical Consultants, Ltd. v. Hollister*, 863 F.2d 867 (Fed. Cir. 1988). The proposed instruction stated:

> It is not improper to amend or add patent claims intended to cover a competitor's product about which the applicant has learned during the prosecution of the patent application, including a continuation or divisional patent application, provided that the claims are supported by the original patent application.

The Court, however, determined that the proffered instruction was a misstatement of the law as applied to the facts of this case and would mislead the jury. The Court agreed to give Rambus' proffered instruction, with the following additional limitation: "provided that the added or amended claims are not based on information obtained by engaging in wrongful conduct." Rambus rejected this instruction allegedly because it believed that the language would have rendered the instruction incorrect and confusing to the jury.

Rambus contends that the failure to give its proposed instruction constituted prejudicial error because the *Kingsdown* instruction would have eviscerated Infineon's fraud claim. Contrary to Infineon's theory at trial, Rambus asserts that *Kingsdown* allows Rambus to add claims that would render other JEDEC participants patent infringers. *See Kingsdown*, 863 F.2d at 874 ("there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitors product the applicant's

attorney has learned about during the prosecution of a patent application.").

Infineon responds that the jury instruction was correctly rejected because the instruction could have, and likely would have, misled the jury to infer that, under the patent laws, it is acceptable for a member of a standard-setting body to breach its duty of its disclosure.[22] Thus, because the instruction was not tailored to the facts of this specific case, Infineon argues that rejection of the instruction, as proposed by Rambus, was appropriate. *See Duke v. Uniroyal Inc.*, 928 F.2d 1413, 1421 (4th Cir. 1991) ("Abstract propositions of law stated to the jury without regard to the factual circumstances are potentially confusing.").

The first task is to decide whether the failure to give the *Kingsdown* instruction was error. It was not. *Kingsdown* was concerned with the unenforceability of a patent based on inequitable conduct before the PTO. The Federal Circuit held that the mere act of filing patents to cover a competitor's

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[22] Of course, that is not the law. *See Wang Lab., Inc. v. Mitsubishi Elec.*, 103 F.3d 1571, 1582 (Fed. Cir. 1997) (affirming a finding of an implied license based on equitable estoppel because, when the patent holder was a member of JEDEC, "the entire course of conduct" between the parties led Mitsubishi "to infer consent to manufacture and sell the patented products."); *Stambler v. Diebold, Inc.*, 11 U.S.P.Q.2d, 1709, 1714-15 (E.D.N.Y.1988) (holding that a patent holder who believed that a certain technology infringed his patents, but did not tell the standard-setting body of which it was a member that his patent applied to the technology under consideration, was equitable estopped from asserting his patent because of his misleading silence), *aff'd* 878 F.2d 1445 (Fed. Cir. 1989); *Potter Instr. Co. v. Storage Tech. Corp.*, 207 U.S.P.Q. 763, 769 (E.D. Va.1980) (holding that patent holder was estopped from asserting its patent when it participated in a standards-setting organization and failed to inform the organization of its relevant patent, in contravention of that group's policy), *aff'd on laches ground*, 641 F.2d 190 (4th Cir. 1981).

These decisions further underscore the error in the *Kingsdown* instruction proposed by Rambus.

product was not improper conduct and therefore could not be a basis for finding inequitable behavior before the PTO.

Here, the issue before the jury was not whether Rambus behaved inequitably before the PTO by obtaining additional patent claims, but instead whether Rambus committed fraud under Virginia law by failing to disclose its pending patent applications to a standard-setting body, notwithstanding the obligation to do so. The instruction offered by Rambus would have been confusing to the jury because it gives the impression (as Rambus, no doubt, desired), that, simply because it is permissible under the patent laws to obtain patents to cover a competitor's product, that it is likewise permissible to commit fraud that facilitates the obtaining of such a patent. Rambus cited no decision, at trial or even now, indicating that the *Kingsdown* rule could be distorted in such a fashion.

Moreover, the distinction offered in the Court's proffered version of the instruction is analogous to the exception mentioned in *Kingsdown*: "[a]ny such amendment or insertion must comply with all statutes and regulations." *Kingsdown*, 863 F.2d at 874. That text teaches that the instruction permitted by *Kingsdown* cannot be based on information obtained by engaging in wrongful conduct because that conduct is in violation of the law of fraud.

Because the instruction was not in error, the motion for JMOL will be denied. Even assuming, *arguendo*, that it was error, JMOL is still inappropriate. Rambus argues that, because a properly instructed jury could not have returned a verdict of fraud based on the evidence, JMOL in its favor is required. *See Jamesbury Corp. v. Litton Indus. Prods., Inc.*, 756 F.2d 1556, 1560 (Fed. Cir. 1985) (concluding that the court erred in instructing the jury, thus making a grant of a new trial appropriate; however the appellant requested JNOV, therefore the court would consider the evidence under the proper legal standard). Infineon responds that Rambus' claim of prejudice is pure speculation.

Viewing the evidence through the legal standard of *Kingsdown*, JMOL would still be inappropriate because the propriety of filing amendments under the patent laws is a separate inquiry from the fraud claim. Even though Rambus is allowed, at some general level, to draft claims to cover a competitor's product, it cannot do so when that action would breach a duty it incurred as result of being a member of a standard-setting body. The breach of that duty was based on a failure to disclose pending patent applications, not on Rambus choice to amend its patents. Therefore, the proffered instruction, if given to the jury, would not have affected the finding of fraud.

II. DISCUSSION: MOTION FOR NEW TRIAL

Rambus has moved also for a new trial under Fed. R. Civ. P. 59(a) asserting as the grounds for that motion virtually the same theories advanced in support of its motion for JMOL.

A. Standard for Motion for a New Trial

Pursuant to Rule 50(c),

> [i]f the renewed motion for judgment as a matter of law is granted, the court shall also rule on the motion for a new trial, if any, by determining whether it should be granted if the judgment is thereafter vacated or reversed, and shall specify the grounds for denying the motion for the new trial.

Fed. R. Civ. P. 50(c)(1). Rule 59(a), in turn, provides that a motion for new trial may be granted "for any of the reasons for which new trials have heretofore been granted in actions at law."

"There is a significant difference between deciding a motion for [JMOL] and deciding a motion for a new trial. The trial court is prohibited from assessing the credibility of witnesses and weighing the evidence when ruling on a motion for [JMOL]. In contrast, the trial court can weigh evidence and assess credibility in deciding whether to grant a new trial."

Whalen v. Roanoke Co. Bd. of Supervisors, 769 F.2d 221, 226 (4th Cir. 1985). *See also* 9 *Moore's Federal Practice*, § 50.08[2] (3d. ed. 1998) (same). "Judgment as a matter of law may be granted only when no reasonable jury could find for the nonmovant, but a motion for new trial may be granted as long as the judge has the firm conviction that the verdict is incorrect." *Id.* The Fourth Circuit has explained that, under Rule 59:

> A new trial will be granted if (1) the verdict is against the clear weight of the evidence, or (2) is based upon evidence which is false, or (3) will result in a miscarriage of justice, even though there may be substantial evidence which would prevent the direction of a verdict.

Cline v. Wal-Mart Stores, Inc., 144 F.3d 294, 301 (4th Cir. 1998) (internal citations omitted). *See also Wyatt v. Interstate & Ocean Transp. Co.*, 623 F.2d 888, 891-92 (4th Cir. 1980).

B. Motion For New Trial

To the extent that the new trial is sought on grounds that have been rejected in denying the motion for JMOL, the motion for new trial is denied for the reasons given in denying the motion for JMOL. Moreover, after assessing the credibility of the witnesses and weighing the evidence, the Court is of the opinion that the verdict imposing liability, nominal damages and punitive damages for the actual fraud claim is certainly supported by the clear weight of the evidence and is not based on evidence that is false. Indeed, a weighing of the evidence and assessment of the credibility of the witnesses leads the Court to firm conviction that the jury rightly, and on clear and convincing evidence, decided the actual fraud claim as it concerned the conduct of Rambus in the JEDEC SDRAM standard-setting process. The evidence clearly and convincingly showed the existence of a disclosure duty that was intentionally violated by Rambus with the goal that Infineon,

indeed all JEDEC members, would rely on its silence in constructing an SDRAM standard, with the result that products made in compliance with it would infringe Rambus' products. The evidence showed clearly and convincingly that Infineon reasonably relied on Rambus' silence and representations in deciding to vote for the JEDEC SDRAM standard and in designing and manufacturing and marketing its JEDEC-compliant SDRAM products. As explained previously, Infineon was undoubtedly injured by the fraud.

Further, the evidence clearly and convincingly showed that Rambus committed actual fraud wantonly and maliciously and in total disregard of the rights of Infineon and all other JEDEC members by coupling its deliberate, pervasive, long-term violation of JEDEC's disclosure policy with its implemented strategy to take advantage of its fraud by constantly using information (made known to it only because it was a JEDEC member) to modify its patent applications to assert claims which Rambus intended to cover the technology of the JEDEC standard. And, it did all that so that it could exact inordinately high royalty rates from the manufacturers who were, for the most part, the very JEDEC members who were offended by the fraud of non-disclosure. Punitive damages are entirely appropriate to sanction conduct of that sort. Thus, there is no miscarriage of justice by allowing the thoroughly grounded actual fraud verdict to stand and, indeed, to be implemented to the full extent permitted by law.

Nor does the Court harbor any apprehension about the validity of the jury's verdict on the statute of limitations. It is fully supported by the evidence.

Lastly, because the Rambus' proffered jury instruction based upon *Kingsdown Medical*, 863 F.2d 867, was properly rejected and, alternatively, because Rambus suffered no prejudice from the failure to instruct the jury pursuant to *Kingsdown Medical*, the motion for a new trial on that ground is likewise denied.

Although the motion for JMOL was granted on the constructive fraud claim (Count 11), the motion for new trial is nonetheless denied as to that count because the grant of JMOL was predicated on a purely legal question. If the JMOL is reversed because of error in the decision that, as a matter of law, a negligent non-disclosure cannot constitute fraudulent concealment under Virginia law, there is no need for a new trial because the evidence otherwise fully supports a verdict of constructive fraud.[23]

As to the motion for new trial on the actual fraud verdict (Count 10) respecting Rambus' conduct in connection with the DDR SDRAM standard-setting process, a new trial is in order if the grant of JMOL on that issue is reversed. The evidence, as recited previously, leaves the Court the "firm conviction that the jury verdict was incorrect" and that the verdict was against the clear weight of the evidence. The weight of the evidence demonstrates that Infineon failed to prove that Rambus had a duty to disclose pending patents relating to DDR SDRAM because Rambus was not a member of JEDEC at the relevant time in which the DDR SDRAM standard was under consideration.

Thus, in the event that the grant of JMOL on the DDR SDRAM standard is adjudged to be in error, a new trial should be held as to actual fraud in respect of the JEDEC to the DDR SDRAM standard-setting.[24] Because Rambus has prevailed on

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[23] The constructive fraud claim would have to be set aside, as a matter of law, for the additional reason that constructive fraud, under Virginia law, does not require proof that the fraud was committed wantonly or maliciously which, as explained in Section II.C.6.c, is the predicate for recovery of attorneys' fees as damages under Virginia law. If that legal conclusion is incorrect, then there still is no warrant for a new trial.

[24] Although the jury verdict form asked the jury to specify whether its fraud finding related to the SDRAM or DDR SDRAM technology or both, the damage awards were not separated by technology. Nevertheless, Rambus has agreed that, if the DDR SDRAM fraud verdict were set aside, it would

its challenge to the duty, it is not necessary to consider Rambus' remaining challenges to the fraud finding on the DDR SDRAM.

CONCLUSION

For the reasons set forth above, Rambus' motion for judgment as a matter of law is granted in part and denied in part as explained in the foregoing opinion.

The Clerk is directed to send a copy of this Memorandum Opinion to all counse of record.

It is so ORDERED.

/s/ Robert E. Payne
United States District Judge

Richmond, Virginia
Date: August 9, 2001

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not be necessary to conduct a new trial on damages because the finding of liability on the SDRAM technology alone would support the $1.00 in nominal damages for actual fraud and $3,500,000.00 in punitive damages. Rambus acknowledges that Infineon's proof at trial did not distinguish between the two technologies for purposes of establishing damages.

Furthermore, Rambus does not ask the Court for a new trial on the issue of fraud as to the SDRAM standard merely as a consequence of a grant of JMOL on the DDR SDRAM standard, however, Rambus has not waived its other grounds for the motion for a new trial.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Richmond Division

RAMBUS, INC.,

Plaintiff,

v. Civil Action No. 3:00cv524

INFINEON TECHNOLOGIES AG,
and INFINEON TECHNOLOGIES
NORTH AMERICA CORP.,
And INFINEON TECHNOLOGIES
HOLDING NORTH AMERICAN, INC.,

Defendants.

MEMORANDUM OPINION

The Defendants and Counterclaim Plaintiffs, Infineon Technologies AG, Infineon Technologies North America Corp. and Infineon Technologies Holding North America, Inc., (collectively "Infineon") prevailed on the claims of patent infringement asserted by the Plaintiff and Counterclaim Defendant, Rambus, Inc. ("Rambus"). At the conclusion of a two and one-half week trial, the jury found in favor of Infineon on its constructive fraud and actual fraud counterclaims. By separate opinion and order, the verdict on the constructive fraud count is to be set aside, the Court having granted Rambus' motion for judgment as a matter of law on that count; and the verdict on the actual fraud claim is to be set aside in part.

Infineon now petitions the Court for an award of attorneys' fees and costs under: (1) 35 U.S.C. § 285, which allows the prevailing party in a patent case to recover its attorneys' fees in "exceptional" circumstances; (2) Virginia law for its attorneys'

fees incurred in pursuit of the fraud claim; and (3) the inherent equitable power of the court to sanction those parties that litigate in bad faith. For the reasons set forth below, the request for attorneys' fees and costs pursuant to § 285 and under Virginia law (as a prevailing party of a claim of fraud) is granted; and the request for fees and costs under the inherent equitable power of the court is denied.[1]

STATEMENT OF PROCEDURAL AND FACTUAL BACKGROUND

I. Procedural Background

Rambus filed a complaint on August 8, 2000, alleging that Infineon had infringed two of its patents. On October 20, 2000, Rambus filed a First Amended Complaint which added charges of infringement of two additional patents. In March 2001, the Court issued an opinion pursuant to *Markman v. Westview Instrs. Inc.*, 52 F.3d 967 (Fed. Cir. 1995), *aff'd* 517 U.S. 370 (1996) to construe the disputed claim terms of the patent. Thereafter, Rambus abandoned, before trial, the charge of infringement as to one of the patents-in-suit, U.S. Patent No. 5,954,804. After the presentation of Rambus' infringement case, the Court granted JMOL in Infineon's favor on the remaining three patents-in-suit, U.S. Patent Nos. 5,953,263; 6,032,214; and 6,034,918.

The trial proceeded, however, on the counterclaims filed by Infineon. After prevailing on the infringement suit, Infineon agreed that its claims of invalidity, non-infringement and unenforceability of the four patents-in-suit (Counts 1-4) were moot, as was its claim for monopolization of the relevant technology market in violation of the Sherman Act, 15 U.S.C. § 2 (Count 12). The Court granted JMOL in favor of Rambus

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[1] Infineon asserted, in its Counterclaim, claims for antitrust law violations and breaches of contract, which were dismissed under Fed. R. Civ. P. 50 and a claim for civil RICO which was rejected by the jury. Infineon makes no claim for fees incurred in pursuing those unsuccessful claims.

on Counts 8 and 9, which alleged that Rambus breached its contract with JEDEC,[2] a technology standards-setting body (Count 8) and that Infineon was a third-party beneficiary of that breached contract (Count 9). The Court also granted JMOL in favor of Rambus on Infineon's attempted monopolization claim (Count 13). *See* 15 U.S.C. § 2.

At the conclusion of the two and one-half week trial, the jury, in a special verdict form, found Rambus liable for committing actual and constructive fraud in its conduct at JEDEC respecting both the Synchronous Dynamic Random Access Memory ("SDRAM") and the Double Data Rate SDRAM ("DDR SDRAM") standards adopted by JEDEC. The jury awarded nominal damages in the amount of $1.00 on each of the fraud claims (Count 10—actual fraud; Count 11—constructive fraud) and punitive damages in the amount of $3,500,000.00 on the actual fraud claim. Pursuant to Va. Code § 8.01-38.1, the Court reduced the amount of punitive damages to $350,000.00. The jury found in favor of Rambus on Infineon's claim of a violation of the Racketeer Influenced and Corrupt Organizations Act ("RICO"), 18 U.S.C. § 1961 *et seq.* (Count 14).

By separate opinion and order entered this day, the finding of liability on the constructive fraud claim (Count 11) is set aside, and that part of the verdict finding Rambus liable for actual fraud (Count 10) respecting its conduct in connection with the DDR SDRAM standard is also set aside.

B. Factual Background

Rambus is a technology company that designs and licenses computer memory systems. Rambus does not manufacture memory devices, but instead licenses its technologies to semiconductor manufacturers. The existence and the

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[2] "JEDEC" is the acronym for the Joint Electronics Devices Engineering Counsel. Its parent organization is the Electronic Industry Association.

profitability of Rambus depends entirely on securing patents and licensing them to manufacturers.

In April 1990, Rambus filed a patent application covering a new design for computer memory systems. The United States Patent and Trademark Office ("PTO") determined that this application, U.S. Patent App. No. 07/510,898 ("the '898 application"), contained 11 independent and distinct inventions. The PTO, therefore, required Rambus to select only one of those inventions to pursue in the '898 application and allowed it to file divisional applications on the remaining inventions. Rambus did precisely that.

As of the date of trial, Rambus had been granted 31 patents based on the 1990 '898 application and numerous applications are currently pending. Many of these early patents are directed to "Rambus DRAMs" or "RDRAMs," which is a predecessor to the SDRAM technology. Rambus licensed several semiconductor manufacturers, including Infineon, for the RDRAM technology.

The four patents-in-suit, however, are addressed to SDRAMs and DDR SDRAMs. In a SDRAM, the central processing unit, or CPU, sends and receives information from the memory device according to the "tick" of a "clock" contained within the memory system. In DDR SDRAMs, the rate of the transfer of information is doubled because information is sent on both the "tick" and the "tock" of the clock.

Infineon makes and sells a variety of semiconductor devices to be used in computers, including SDRAMs and DDR SDRAMs. Infineon's fraud claim focused on Rambus' conduct while Rambus and Infineon were members of JEDEC, an association of semiconductor manufacturers and designers who collaborate to develop industry-wide technical standards for semiconductor products in order to ensure that Dynamic Random Access Memory ("DRAM") products, made by different manufacturers, are compatible with one another. As

part of its standard-setting process, JEDEC sought to avoid incorporating patented technology into its standards. To that end, JEDEC policy required members to disclose patents and patent applications that related to JEDEC's standard-setting work. If JEDEC decided to include a patented technology in a standard, its members who held patents on that technology were required (by agreement) to license that technology "under reasonable terms and conditions that are demonstrably free of any unfair discrimination."

Although a central issue in dispute at trial was whether, before 1993, JEDEC members had a duty to disclose *pending* patent applications (and not just patents that had been issued), the jury concluded that Rambus' disclosure duty extended to both issued patents and pending patent applications. The jury found that Rambus had committed actual fraud by failing disclose its patents or pending patent applications to JEDEC while it was a member of that organization.

The applications for the four patents-in-suit were filed after Rambus had withdrawn its membership from JEDEC. Specifically, the four applications were submitted between 1997 and 1999 and issued in 1999 and 2000. However, the evidence showed that the four patents-in-suit are divisional or continuation applications of other Rambus patents which were pending during the time that Rambus was a member of JEDEC, and at a time when Rambus had a duty to disclose its pending patents. Infineon offered extensive evidence which convinced the jury that Rambus committed actual fraud by: attending JEDEC meetings, listening to the proposed technology to be included in the JEDEC SDRAM standard, remaining silent (in the face of a duty to disclose) about its pending patent applications during those meetings, and, with the assistance of its patent lawyers, obtaining additional patents to cover the features of the JEDEC SDRAM standard, even as those features were being discussed at Committee JC-42.3 meetings.

DISCUSSION

I. An Award of Attorneys' Fees Under 35 U.S.C. § 285

Section 285 provid—es, quite simply, that "[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party." The purpose of § 285 is two-fold.[3] First, it permits an award of fees "where it would be *grossly unjust* that the winner be left to bear the burden of his own counsel which prevailing litigants normally bear." *Badalamenti v. Dunham's Inc.*, 896 F.2d 1359, 1364 (Fed. Cir. 1990), *cert. denied* 498 U.S. 851 (1990) (quoting *J.P. Stevens Co. v. Lex Tex Ltd.*, 822 F.2d 1047, 1052 (Fed. Cir. 1987)) (emphasis in original). Thus, under § 285, an award of attorneys' fees compensates the prevailing party for losses incurred as the consequence of the conduct of the losing party. *See Central Soya Co. v. Geo. A. Hormel & Co.*, 723 F.2d 1573, 1578 (Fed. Cir. 1983). Additionally, § 285 deters parties from bringing bad faith litigation, *see Mathis v. Spears*, 857 F.2d 749, 753-54 (Fed. Cir. 1988), which protects litigants, the courts and the judicial process from abuse. Attorneys' fees are available to the prevailing party under § 285, whether that party is the patentee or the accused infringer. *Eltech Sys. Corp. v. PPG Indus., Inc.*, 903 F.2d 805, 811 (Fed. Cir. 1990).[4]

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[3] Federal Circuit case law "governs the substantive interpretation of 35 U.S.C. § 285, which is unique to patent law." *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 182 F.3d 1356, 1359 (Fed. Cir. 1999).

[4] Arguably, there could be a third step to the inquiry—determining first whether the party is a prevailing party. "There is little guidance on establishing oneself as a 'prevailing party' for purposes of recovering fees. It is clear that the 'prevailing party' need not have won on every claim or defense. Generally, whether a party is a 'prevailing' party depending on the circumstances of the case as a whole." William Pelton and Keum Park, *Damages and Attorneys Fees*, 424 PLI/Pat 555, 633 (1995) (citing *Mathis*, 857 F.2d at 756 and *Warner Bros., Inc. v. Dae Rim Trading, Inc.*, 877 F.2d 1120, 1126-27 (2d Cir.1989)).

Rambus does not dispute that Infineon is a prevailing party in this instance.

Deciding whether to award attorneys' fees under § 285 necessitates a two-step inquiry. *Interspiro USA, Inc. v. Figgie Int'l Inc.*, 18 F.3d 927, 933 (Fed. Cir. 1994). First, the party requesting the award of fees must prove by *clear and convincing* evidence that, as a matter of fact, the case is exceptional within the meaning of § 285. *Badalamenti*, 896 F.2d at 1364. This means that "there must be some finding of unfairness, bad faith, or inequitable conduct on the part of the unsuccessful patentee." *Id.* (quoting *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 713, (Fed. Cir. 1983); *Advance Transformer Co. v. Levinson*, 837 F.2d 1081, 1085 (Fed. Cir. 1988)). "[E]xceptional circumstances include, *inter alia*, inequitable conduct during prosecution of a patent, misconduct during litigation, vexatiousness or unjustified litigation, or a frivolous suit." *Bayer Aktiengesellschaft v. Duphar Intn'l Research*, 738 F.2d 1237, 1242 (Fed. Cir. 1984). *See Beckman Instr., Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989) ("Among the types of conduct which can form a basis for finding a case exceptional are willful infringement, inequitable conduct before the P.T.O., misconduct during litigation, vexatious or unjustified litigation, and frivolous suit"). *See also Multi-Tech, Inc. v. Components, Inc.*, 708 F. Supp. 615, 620 (D. Del. 1989) ("there must be some finding of unfairness, bad faith, inequitable conduct, vexatious litigation or some similar exceptional circumstances.").

Second, if a case is found to be exceptional within the parameters of § 285, it is necessary then to determine whether an award of attorneys' fees to the prevailing party is warranted. *Interspiro*, 18 F.3d at 933. Thus, the district court must decide "whether the award of attorney fees [is] appropriate and whether the amount of the award [is] reasonable." *Reactive Metals and Alloys Corp. v. ESM, Inc.*, 769 F.2d 1578, 1583 (Fed. Cir. 1985). This inquiry is entrusted to the discretion of the trial court, *id.*, and the exercise of that discretion is informed by the decisional law interpreting § 285 and the precepts

generally accepted for assessing the reasonableness of attorneys' fee awards as applied by the Federal Circuit

A. Is this Case Exceptional Under § 285?

Infineon asserts that this is an exceptional case because, Rambus (1) acted in bad faith in bringing the patent infringement suit and in continuing to prosecute it after the *Markman* decision; and (2) engaged in misconduct during the prosecution of that suit and during the defense of Infineon's counterclaims. While bad faith and litigation misconduct certainly can supply the basis for an award, that is not to say that "all successful defendants are entitled to attorney fees or to attorney fees and expenses. The requirement in Section 285 of establishing an 'exceptional case' remains a formidable and adequate barrier to unwarranted awards." *Mathis*, 857 F.2d at 754. Accordingly, "a successful defendant in a patent infringement suit seeking to recover fees must demonstrate that there is evidence of actual wrongful intent or of gross negligence on the part of the plaintiff in bringing the action." *Multi-Tech*, 708 F. Supp. at 620.

1. The Basis for Bringing the Suit and the Continued Prosecution of it After the *Markman* Opinion

Attorneys' fees under § 285 may be awarded if the patent infringement suit is baseless or frivolous because "[t]he only deterrent to the . . . improper bringing of clearly unwarranted suits on obviously invalid or unenforceable patents is Section 285." *Mathis*, 857 F.2d at 754. "A frivolous lawsuit is one which the patentee knew or, on reasonable investigation, should have known, was baseless." *Haynes Intn'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1579 (Fed. Cir. 1993), *reh'g* 15 F.3d 1076 (Fed. Cir. 1994). "Frivolousness must be measured against objective facts." *Refac Intn'l, Inc. v. IBM Corp.*, 710 F. Supp. 569, 570 (D. N.J. 1989). "[T]he issue of frivolousness . . . is determined at the time suit was filed and throughout the time it was maintained." *Haynes*, 8 F.3d at 1580 (emphasis added).

Infineon argues that Rambus' patent infringement suit, from the very beginning, lacked merit and, therefore, was frivolous litigation. Under Infineon's argument, Rambus knew, or should have known, that the suit was baseless because: (1) the claim constructions asserted by Rambus were refuted by the intrinsic evidence respecting the patents; and (2) Rambus' fraudulent behavior at JEDEC would have prevented the enforcement of the patents- in-suit under the theory of equitable estoppel.[5]

a. The Merit of Rambus' Claim Construction

It is well-established that the institution of an infringement suit by a patent holder who knew, or should have known, that the patent claims, when properly construed, could not be infringed by the accused products, can support a finding of "exceptional circumstances" under § 285. For example, in *Multi-Tech, Inc. v. Components, Inc.*, 708 F. Supp. 615 (D. Del. 1989), the district court found that the case was "exceptional" because the patent holder's decision to prosecute the case, "in light of the well- documented prosecution history" refuting the patent holder's claim construction, constituted at least "gross negligence." *Id.* at 622. A review of the prosecution history of the patent proved that the patentee "distinguished its invention from the prior art"—the same prior art that the patentee, during the litigation, argued was covered by the patent. *Id.* at 621. The court thus found that, given the disclaimers in the patent

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[5] To prevail on the defense of equitable estoppel in a patent case, the defendant must prove: (a) misconduct by the patent holder, including statements, action, inaction or silence in the face of an obligation to speak, leading the alleged infringer to reasonably infer that the patentee does not intend to enforce its patent against the alleged infringer; (b) the alleged infringer relies on that conduct; and (c) due to its reliance, the alleged infringer will be materially prejudiced if the patentee is allowed to proceed with its claim. *Calmac Mfg. Corp. v. Dunham-Bush, Inc.*, 929 F. Supp. 951, 957 (E.D. Va. 1996) (citing *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1028 (Fed. Cir. 1992)).

history, the decision to prosecute, and to continue the prosecution of, the case qualified the case as exceptional. *Id.* at 622.

The finding of exceptionality was further supported by the fact that: (1) as a company whose profits derived from plastics, the patentee knew that its inventions did not cover thermoplastics and its submissions to the PTO proved as much; and (2) the patentee should have carefully evaluated the merits of its suit after repeated statements from the defendant indicating that the suit was baseless and that it would seek recovery of attorneys' fees. *Id.* The *Multi-Tech* court, therefore, concluded that "[a]ll these factors considered together, though perhaps none by itself is sufficient, demonstrate by clear and convincing evidence that this is an exceptional case within the meaning of the statute." *Id.* at 622-23.

Similarly, in *Refac Intn'l Inc. v. IBM Corp.*, 710 F. Supp. 569, 572 (D.N.J. 1989), the district court awarded attorneys' fees based on the fact that the plaintiff "knew, or should have known, that the case was frivolous." The district court granted summary judgment in favor of the accused infringers, holding that the patent was invalid under 35 U.S.C. § 112 because it "did not disclose with particularity the invention and did not set forth the 'best mode'." *Id.* at 570. The award of attorneys' fees under § 285 was influenced, in significant part, by the fact that the plaintiff had insisted that a term in the patent had a certain meaning, when the language and drawings of the patent rather clearly dictated otherwise. *Id.* at 571. Furthermore, business records revealed that the plaintiff understood the weakness of its suit, but persisted in prosecuting smaller companies so that they would settle quickly, "which could then be used as a war chest to prosecute others." *Id.* The court concluded that the plaintiff knew, or should have known, that the action was frivolous and that it did not act in good faith in bringing or pressing the action, and, thereupon assessed attorneys' fees against the plaintiff. *Id.* at 571-72.

Lastly, in *Mathis v. Spears*, 857 F.2d 749 (Fed. Cir. 1988), the Federal Circuit upheld the award of attorneys' fees which was predicated on several acts of misconduct, including the institution of a frivolous action. The district court found the patents invalid and unenforceable because of inequitable conduct. *Id.* at 751. The plaintiff had misleadingly told the PTO that the invention was nowhere in prior art; concealed some 295 invoices during discovery which demonstrated invalidity; "disingenuously" explained this discovery noncompliance; submitted misleading evidence of tests; engaged in misconduct upon appeal (such as questioning the court's impartiality); and accused the defendant of "inequitable conduct" solely because it thoroughly researched "every conceivable issue," thus its increasing attorneys' fees. *Id.* at 752-53. The Federal Circuit concluded that "a wrong has been done. Mathis has severely injured [the defendant], having forced it to defend, at monstrous expense, its right to freely compete, subjecting [the defendant] to a totally unwarranted suit and two unwarranted appeals." *Id.* at 753-54.

Applying those basic legal principles to the facts of this case, the clear and convincing evidence shows that Rambus knew, or should have known, that its patent infringement suit was baseless, unjustified, and frivolous—one in which reasonably "intelligent people should have known would have no chance of success." *Multi-Tech*, 708 F. Supp. at 620. As was the case in *Multi-Tech*, Rambus' construction of the disputed claim terms and its theory of infringement were directly at odds with the intrinsic evidence contained in specifications and prosecution histories of the patents-in-suit. As explained more fully in the claim construction opinion issued in this action, *see Rambus, Inc. v. Infineon AG*, Civil Action No. 3:00cv524 (E.D. Va. March 15, 2001), Rambus' view of the patents was completely untethered to the language of the patent claims or the written description, and, in many cases, flatly contradicted the written description.

One such example of Rambus' repeated disregard of the limitations contained in the patent prosecution history was its construction of the term "bus," which, as shown by the intrinsic evidence, clearly meant "a multiplexed set of signal lines used to transmit address data and control information" in DRAMs. Rambus insisted that the term bus, as used in the patents, did not require the bus lines to be multiplexed. However, the patent specification repeatedly stated that Rambus' inventions were meant to work in conjunction with a multiplexed bus and it even distinguished prior art on the basis that it did not use a multiplexed bus. Significantly, Infineon's products do not use a multiplexed bus. Rambus' construction of the other disputed claim terms was equally untenable because they, too, were fundamentally inconsistent with the specifications and the prosecution histories of the patents-in-suit.

Rambus contends that, because it had expert testimony to support its interpretation of the claim terms, it cannot be said to have lacked a good faith belief in its construction of the claims. That contention fails because the opinions of the expert (Dr. William Huber) were wholly unacceptable for the reasons that: (1) his opinions were not grounded in, or were inconsistent with, the intrinsic evidence; and (2) on cross-examination at the *Markman* hearing, his explanations of the obvious conflicts were inherently incredible. A litigant cannot be allowed to prosecute, under the guise of good faith, a facially erroneous claim construction predicated on the basis of opinions of the sort on which Rambus relied. If it were otherwise, litigants could avoid an exceptional case determination (and its consequences) simply by proffering meritless expert opinions. To the contrary, the prophylactic purposes of § 285 are best served by requiring litigants to sponsor, and rely on, expert witnesses who tether their opinions to the intrinsic evidence.

Rambus' bad faith is further underscored by its refusal to abandon its infringement case after its claim constructions were altogether rejected in the *Markman* opinion. In fact, the Court

asked Rambus whether it could proceed further with its infringement case in the face of the *Markman* opinion. Additionally, counsel for Infineon suggested on three different occasions that Rambus could not pursue its infringement case in light of the *Markman* ruling. In response to the Court and to the assertions of Infineon, Rambus insisted that it could salvage its case. Although Rambus thereafter wisely dropped its assertion of infringement of the single asserted claim of the '804 patent, it pressed ahead with the remaining three patents by formulating an untimely expert report which modified its literal infringement analysis and which added, for the first time, a doctrine of equivalents infringement analysis. Even after the Court rejected these tactics as violative of numerous scheduling orders and inconsistent with the *Markman* ruling, Rambus remained resolute in asserting that it could prove infringement on all 56 claims of the three remaining patents in suit.[6] *See Eltech Sys. Corp. v. PPG Indus., Inc.*, 903 F.2d 805, 811 (Fed. Cir. 1990) ("Where . . . the patentee is manifestly unreasonable in assessing infringement, while continuing to assert infringement in court, an inference is proper of bad faith, whether grounded in or denominated wrongful intent, recklessness or gross negligence.").

At trial, Rambus again tried to skirt the consequences of the claim interpretation opinion by creating more dispute over the precise scope of the *Markman* ruling, a dispute that had not been raised at the *Markman* hearing or prior to trial. Because the proffered revised testimony of Rambus' expert Dr. Huber

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[6] It is noteworthy that Rambus even sought to continue to press patent claims which contained typographical or clerical errors, even though Federal Circuit law clearly holds that a patent holder cannot rely on a certificate of correction in a patent infringement suit filed *before* the certificate issues. *See Southwest Software, Inc. v. Harlequin Inc.*, 226 F.3d 1280 (Fed. Cir. 2000). Again, rather than concede the obvious, Rambus marched ahead with these claims until the Court ruled that it could not properly assert those claims. That meant, of course, that Infineon had to incur additional attorneys' fees to prove the utter lack of merit in Rambus' position.

appeared to be in conflict with the claim construction opinion, the Court agreed to hear the testimony out of the presence of the jury. The Court excluded most of the testimony, and it appeared that Rambus was about to concede—what had been obvious from the beginning-that it could not present a plausible infringement case under the Court's claim construction. Rambus, however, considered the matter over the weekend and again decided to proceed with its infringement case. After hearing Dr. Huber's testimony and receiving briefing from the parties, the Court granted Infineon's motion for JMOL on the issue of infringement.

The patent prosecution history and the Court's claim interpretation made it quite clear that Infineon's products did not infringe the patents primarily because they did not employ a multiplexed bus. Rambus' decision to proceed in the face of this overwhelming barrier cannot possibly be said to have been made in good faith. Because the court must judge the frivolousness of the suit both at the commencement of the suit and as it continues, *Haynes*, 8 F.3d at 1580, both the institution of this case and its prosecution after the *Markman* ruling makes it exceptional because Rambus should have known, upon careful consideration, that it could not plausibly present an infringement analysis.

Additionally, even if Rambus believed that it could escape the limitations of the claim construction ruling by relying on a new literal infringement analysis or doctrine of equivalents analysis, that belief was debunked as of the Court's April 19, 2001 ruling which excluded a majority of Dr. Huber's testimony as reflected in his Second Supplemental Report. Therefore, at a minimum, Rambus should have known by the Thursday before jury selection began on Friday, that Infineon's products could not be shown to infringe the remaining patents in suit and therefore, the suit was baseless. Rather than acknowledge the futility of its position, preserve its rights to appeal and proceed to defend the counterclaims, Rambus

obdurately pressed claims it knew it could not win. That, and the fact that its claim construction from the outset was based on extrinsic evidence so basically at odds with the intrinsic evidence, makes this an exceptional case.

b. Rambus' Inequitable Conduct

Another purpose of allowing attorneys' fees under § 285 is "to compensate the prevailing party because the losing party's misconduct was so unfair and reckless as to make it unconscionable for the prevailing party to sustain the expense of counsel." *T.A. Pelsue Co. v. Grand Enter., Inc.*, 782 F. Supp. 1476, 1500 (D. Colo. 1991). "In the case of awards to prevailing accused infringers ..., 'exceptional cases' are normally those of bad faith litigation or those involving *fraud or inequitable conduct by the patentee in procuring the patent.*" *Cambridge Prods., Ltd. v. Penn Nutrients, Inc.*, 962 F.2d 1048, 1050-51 (Fed. Cir. 1992) (emphasis added).

The fraud proved at trial is not the genre of inequitable conduct that usually is presented in those decisions holding that inequitable conduct warrants imposition of attorneys' fees under § 285. In most cases, the fraud relates to a patentee's conduct before the PTO. Here, the fraud was directed toward the alleged infringer. The fraudulent scheme proved by Infineon at trial demonstrates that one of Rambus' goals was to procure patent rights on the technology to be included in the JEDEC SDRAM standard. The achievement of this goal, however, necessarily involved a breach of Rambus' duty of disclosure imposed by virtue of its membership in JEDEC. Hence, in a very real way, the fraud committed by Rambus was integral to procuring the patents-in-suit.[7]

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[7] It is important to note that the mere act of amending a patent application in an attempt to cover a competitor's product is not itself improper. *See Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) ("there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known

The other purpose of the fraud was to ensure a means of enforcing the patent rights through litigation. The parties have not cited, nor has the Court located, decisions permitting an exceptional case finding where a significant component of the inequitable conduct of the patentee is a scheme to insure the enforceability of a patent (here, by remaining silent in the face of a duty disclose and then using the information obtained about the forthcoming JEDEC SDRAM standard to modify patent applications or file new claims so that Rambus' patents would cover any product that was compliant with the JEDEC standard).

However, that conduct was part of the fraud proved at trial and conduct of that sort has been found to be inequitable. *See Wang Lab., Inc. v. Mitsubishi Elec.*, 103 F.3d 1571, 1582 (Fed. Cir. 1997); *Stambler v. Diebold, Inc.*, 11 U.S.P.Q.2d, 1709, 1714-15 (E.D.N.Y. 1988), *aff'd* 878 F.2d 1445, (Fed. Cir. 1989); *Potter Instr. Co. v. Storage Tech. Corp.*, 207 U.S.P.Q. 763, 769 (E.D. Va. 1980), *aff'd on laches ground*, 641 F.2d 190 (4th Cir.1981). Hence, on this record it seems logical and consistent with precedent to conclude that the fraud found in the breach of the disclosure duty and the manipulation of Rambus' position as a JEDEC member in order to ensure that its patent rights covered the JEDEC standard qualifies as inequitable conduct for the purpose of ascertaining whether this is an exceptional case under § 285. That conduct is not different in

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competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitors product the applicant's attorney has learned about during the prosecution of a patent application."). *See also Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1482 (Fed. Cir. 1998).

The finding of bad faith here, however, is not premised upon Rambus' choice to file additional claims to cover a competitor's product. Instead, it is the manner in which Rambus accomplished its goal—namely the infiltration of JEDEC and the violation of disclosure duties it accepted by virtue of its membership in JEDEC and by participating in that organization's standard-setting process.

any material respect from that on which exceptional case findings have been made on other fact patterns.

Rambus knew that its patents were inextricably tied to its fraudulent conduct at JEDEC; and Rambus knew, or should have known that, if its conduct were discovered, it could very well be estopped or enjoined from asserting those patents.[8] *See Potter Instr. Co., Inc. v. Storage Tech. Corp.*, 641 F.2d 190, 192 (4th Cir. 1981) ("[equitable] estoppel forecloses . . . prospective patent enforcement through an injunction or through damages for continuing infringement") (citing *Studiengesellschaft Kohle v. Eastman Kodak Co.*, 616 F.2d 1315, 1325 (5th Cir. 1980)). Indeed, Rambus' patent counsel told its executives as much. This, of course, supplies yet another reason why institution of the patent infringement action here was in bad faith in the first instance. It is also an independent reason for finding this to be an exceptional case.

As explained fully in the opinion addressing Rambus' motion for judgment as a matter of law, the record is replete with evidence of Rambus' fraud during its tenure with JEDEC. From the beginning of its membership in JEDEC, Rambus

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[8] Infineon's affirmative defense of equitable estoppel was not decided in this case because its success on the infringement claims mooted the defense. The elements for equitable estoppel, however, are analogous in many ways to Infineon's fraud counterclaim, upon which it prevailed. *Compare Calmac Mfg. Corp. v. Dunham-Bush, Inc.*, 929 F. Supp. 951, 957 (E.D. Va. 1996) (elements which must be proven for equitable estoppel defense are: (a) misconduct by the patent holder, including statements, action, inaction or silence in the face of an obligation to speak, leading the alleged infringer to reasonably infer that the patentee does not intend to enforce its patent against the alleged infringer; (b) the alleged infringer relies on that conduct; (c) due to its reliance, the alleged infringer will be materially prejudiced if the patentee is allowed to proceed with its claim) with *ITT Hartford Group, Inc. v. Virginia Finan. Assoc., Inc.*, 520 S.E.2d 355, 361 (1999) (elements of actual fraud under Virginia law are: (1) a false representation; (2) of a material fact; (3) made intentionally and knowingly; (4) with the intent to mislead; (5) reliance by the party mislead; and (6) resulting damage to the party misled).

consciously and deliberately violated the disclosure policy of JEDEC by concealing its patents and patent applications which related to JEDEC's SDRAM standards-setting work. Furthermore, Rambus storehoused information on the progress of JEDEC's SDRAM work and used that knowledge to apply for and obtain additional patents that would cover products made in compliance with the JEDEC standard.

The evidence at trial also showed that Rambus knew that JEDEC members would rely on its silence at meetings when drafting and adopting the new SDRAM standard. For example, Rambus' Business Plan reflects its intent to demand royalties from SDRAM manufacturers once Rambus obtained its patents covering the SDRAM standard. Thus, after explaining that the JEDEC SDRAM standard had been in process for over two years and that standard-setting was still underway, the Rambus 1992 Business Plan explained:

> Finally, we believe that Sync DRAMs infringe on some claims in our filed patents; and that there are additional claims we can file for our patents that cover features of Sync DRAMs. Then we will be in position to request patent licensing (fees and royalties) from *any manufacturer of Sync DRAMs* . . . .

Of course, Rambus never told Infineon or JEDEC anything of the sort.

Additionally, the evidence that Infineon discovered after it succeeded on the motion to vitiate the attorney-client privilege under the crime-fraud exception revealed that Rambus' fraudulent behavior was known by and, in some cases perpetrated by, its highest level officials. For example, notes made by Rambus' outside patent counsel during a meeting with Richard Crisp and Allen Roberts (a Rambus executive) on March 27, 1992 show that Rambus knew that a finding of

inequitable conduct could be a consequence of non-compliance with the JEDEC disclosure duty:

> — I [Lester Vincent] said there could be equitable estoppel problem if Rambus creates impression in JEDEC that it would not enforce its patent[s] or patent [applications] . . .
>
> — Less clear cut if Rambus is merely silent . . .
>
> — But cannot mislead JEDEC into thinking that Rambus will not enforce its patent[s] . . .
>
> — possibly abstain from voting

Notwithstanding these admonitions about the doubtful nature of its behavior, Rambus remained a member of JEDEC and continued its silence, thus creating the impression that it did not hold patents or have applications relevant to JEDEC's work in the SDRAM standard-setting process. In so doing, Rambus took the calculated risk that its conduct, if discovered during litigation, might lead to a finding that its conduct was inequitable, or worse.

Although the attorney notes and other equally damning documents were only revealed to the Court and to Infineon a month before trial, Rambus had these documents in its possession for many years and knew the risk that the company was taking. Rambus knew, or should have known, that instituting a patent infringement action would not be in good faith and that it could be estopped or enjoined from asserting its fraud-tainted patents. Surely too, as a company whose life's blood is patent rights, Rambus was aware that, if its conduct were found to be inequitable, it faced the prospect of paying attorneys' fees under § 285.

2. Litigation Misconduct

"Litigation misconduct and unprofessional behavior are relevant to the award of attorney fees, and may suffice to make a case exceptional under § 285." *Sensonics, Inc. v. Aerosonic*

Corp., 81 F.3d 1566, 1574 (Fed. Cir. 1996). *See also Read Corp. v. Portec, Inc.*, 970 F.2d 816, 831 (Fed. Cir. 1992) ("[L]itigation misconduct may in itself make a case 'exceptional'"). Also, litigation misconduct may be considered along with other factors in making the exceptional case decision. *See Beckman Instr., Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989) ("Among the types of conduct which can form a basis for finding a case exceptional are willful infringement, inequitable conduct before the P.T.O., misconduct during litigation, vexatious or unjustified litigation, and frivolous suit").

The litigation misconduct asserted by Infineon fits into four general categories: (1) the failure to reveal relevant documents during discovery; (2) inaccurate and, in some instances, outright untruthful testimony from Rambus representatives; (3) inaccurate and improper responses to interrogatories and requests for admissions ("RFAs") during discovery; and (4) the destruction of litigation-related documents.

a. Failure to Reveal Documents in Discovery

During discovery, Rambus failed to list numerous documents on its privilege log, which (as it was ultimately learned) documented its fraudulent activity at JEDEC. These documents include notes from Rambus' outside patent counsel, Lester Vincent, which memorialize the existence of pending patents and Rambus' efforts to expand its patent coverage. Additionally, those notes establish that Rambus' JEDEC representative Richard Crisp was intimately involved in the patent-drafting efforts—an involvement which Crisp denied under oath in deposition. Rambus addresses the situation by explaining that these documents were inadvertently retained by counsel for Rambus in another infringement case involving the same patents but a different defendant. Even if that is a mistake made without bad faith, Rambus should still be sanctioned for its gross negligence in failing adequately to search all its files

and all those in the hands of its counsel in the related case during discovery. Moreover, although former counsel may have retained the document by accident, Lester Vincent possessed copies of the documents and those documents should have been reviewed by Rambus when responding to discovery requests because Vincent was an agent of Rambus and he was responsible for prosecuting many of the applications that Rambus knew were at issue in this action. Therefore, Rambus' explanation does not absolve it of the failure to identify these documents.

b. False Testimony by Rambus Executives

Rambus representatives also hindered discovery efforts by providing false or misleading testimony. For example, Richard Crisp (a former executive, now a consultant to Rambus) testified in his first deposition that he "never, ever" participated in Rambus' patent drafting efforts. However, when he was confronted with documents obtained after the piercing of the attorney-client privilege, Crisp was forced to admit that he directed which claims should be filed in response to the technology discussions at JEDEC. Similarly, Rambus' Chief Executive Officer, Geoff Tate, at his first deposition, testified that he did not believe that Rambus drafted claims to cover JEDEC's standard-setting work (indeed, he stated that he did not know that it was possible to amend patent claims), but, at trial he admitted, upon being prodded by reference to the belatedly obtained documents, that he knew that Rambus was amending its patent applications to cover the JEDEC SDRAM standard. Rambus seeks to explain these contradictions by arguing that Crisp and Tate suffered from a memory lapse at their first depositions. That explanation simply strains credulity.

c. Obfuscatory Discovery Responses

Rambus also obstructed discovery in its written responses to Infineon's interrogatories and RFAs. For instance, Rambus responded to an interrogatory by swearing that it did not review any JEDEC or Sync-link standards when drafting its patent claims, even though notes from Lester Vincent (the lawyer who was drafting the Rambus claims) reveal that he specifically requested copies of these standards. Additionally, Rambus refused to admit facts which were not genuinely at issue in trial, thus putting Infineon to the burden of proving facts that were indisputably true, such as: the date of Rambus' membership at JEDEC; the composition of Rambus' patent family tree; Crisp's understanding that JEDEC's patent policy related to both patents and pending patent applications; Rambus' failure to check a box on the JEDEC ballots indicating that it knew of patents relating to the standard at issue; and the accuracy of language which came from Rambus' own documents.

d. Rambus' Document Destruction

Lastly, the record in this case shows that Rambus implemented a "document retention policy," in part, for the purpose of getting rid of documents that might be harmful in litigation. Rambus instituted its document retention policy in 1998. Clearly, Rambus contemplated that it might be bringing patent infringement suits during this timeframe if its licensing efforts were not successful—its Business Plan unequivocally states that the issuance of its JEDEC-related patents would put it in a position to demand royalties from semi-conductor manufacturers.

Rambus executive Allen Roberts testified that one of the reasons for the document destruction was that the documents might be discoverable in future litigation, although he also stated that the policy was basically just a "house-keeping

thing." Additionally, Lester Vincent testified that, although he did not destroy any documents relating to the present litigation after this action was filed, he admitted that he destroyed some documents, pursuant to instructions from Rambus, just before this litigation began but after Rambus sent a letter to Infineon accusing it of infringement. This behavior also qualifies as litigation misconduct. *See Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1575 (Fed. Cir. 1996) (remanding case to consider award of fees and noting that "there is an uncompromising duty to preserve relevant records, and particularly after litigation has begun."); *Hoechst Celanese Corp. v. BP Chems. Ltd.*, 65 F.3d 188 (table), 1995 WL 506964, **4 (Fed. Cir. 1995) (recognizing that inconsistent statement given in affidavit during discovery constituted litigation misconduct); *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1186-87 (Fed. Cir. 1995) (remanding case to determine if plaintiff's intentional destruction of documents after the litigation began, warranted award of fees).

e. Conclusion: Litigation Misconduct

Although the asserted grounds of litigation misconduct considered in isolation may not warrant a finding that this is an exceptional case, it is clear that, when considered in total, they support a finding of exceptionality under § 285. The tactics Rambus chose to employ made it very expensive for Infineon to uncover and prove the fraud. The denial of RFAs and the negative answers to interrogatories required Infineon to embark on a protracted search by deposition and documents for proof that Rambus knew about JEDEC's disclosure policy, had pending applications relating to JEDEC's work and was amending those applications based upon discussions underway at JEDEC meetings. In early depositions, Crisp and Tate simply did not admit the truth. Because of the document destruction (made, it should be remembered, in anticipation of litigation) and because Rambus did not search the files of one

of the lawyers who applied for patents during the key period, the documents produced omitted the documents that revealed, or pointed the way to, the truth. When the crime-fraud ruling forced disclosure of those documents, they told a story far different than reflected in Rambus' initial discovery responses and depositions; and that, of course, necessitated another round of depositions where, with the aid of the new documents, the truth began to emerge.

It simply is unfair to allow Rambus to escape financial responsibility for its litigation misconduct. In this case, that misconduct, considered as a whole, and in connection with the other factors (*see generally* Section I.A.1, *supra*) warrant a finding that this is an exceptional case.

B. Do the Facts of this Case Warrant the Award of Attorneys' Fees, And If So, In What Amount?

1. Propriety of Awarding Fees

Even if sufficient evidence exists to award attorneys' fees, the court nevertheless possesses discretion as to whether or not they should be awarded. *Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 1370 (Fed. Cir. 1999). "[T]here are a number of factors that courts may consider in determining whether an award of attorney's fees is warranted, such as the 'closeness of the case, tactics of counsel, the conduct of the parties and any other factors that may contribute to a fairer allocation of the burdens of litigation as between winner and loser.'" *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 133 F. Supp. 2d 843, 864 (E.D. Va. 2001) (citing *J.P. Stevens Co., Inc. v. Lex Tex Ltd., Inc.*, 822 F.2d 1047, 1051 (Fed. Cir. 1987)).

As determined above, this case is exceptional because: (1) Rambus knew, or should have known, that its infringement action was baseless because of the inherently implausible theory of infringement and patent claim construction pressed by Rambus; (2) Rambus knew, or should have known, that its

patents were unenforceable due to its fraudulent and inequitable behavior while it was a member of JEDEC; and (3) Rambus engaged in a series of litigation misconducts directed at masking its fraud. Although the *Markman* hearing was protracted and complicated, in the end, the construction of the patent claims was not a "close" decision and the Court rejected every one of Rambus' proposed interpretations. Additionally, in light of the rather clear intrinsic evidence, Rambus' infringement theory could not have been credibly asserted. As outlined above, the conduct of Rambus both during its membership at JEDEC, and its actions once it decided to press its infringements claims, was pervasively inequitable.

In sum, Rambus' baseless patent suit, which was a integral part of its fraudulent scheme, makes it unquestionably fair to assess the burden of Infineon's litigation expenses to Rambus. This case is both exceptional and appropriate for the award of fees.

2. The Amount of the Fee

Infineon requests an award of fees and expenses totaling $7,123,989.52.[9] The framework for assessing this request is outlined below.

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[9] These fees consist of $3,097,402.77 in attorneys' fees and $907,388.12 in expenses for litigating the invalidity and non-infringement of Rambus' patents and $2,382,782.87 in attorneys' fees and $736,415.76 in expenses for the equitable estoppel defense and fraud counterclaim.

These totals amounts do not reflect fees incurred in litigating the actual fraud counterclaim respecting Rambus' conduct in connection with the DDR SDRAM JEDEC standard, for which judgment as a matter of law is to be entered in Rambus' favor. Although the Court also granted JMOL in favor of Rambus on Infineon's constructive fraud claim as well, the fees and expenses incurred in litigating that claim are no different than the fees for the actual fraud claim, therefore no adjustment has been made in the totals claimed by Infineon on its fraud counterclaim.

Additionally, these sums do not include fees to which Rambus originally objected because Infineon redacted portions of its invoices. Rather than

The award of attorneys' fees under § 285 "include[s] those sums that the prevailing party incurs in the preparation for and performance of legal services related to the suit." *Central Soya Co., Inc. v. Geo. A. Hormel & Co.*, 723 F.2d 1573, 1578 (Fed. Cir. 1983). Infineon seeks recovery, under § 285, of the fees expended in defense of the patent infringement case and in the prosecution of its fraud counterclaim.[10] It argues that the non-patent claims are inextricably intertwined with the issues in the patent case. *See Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1564 (Fed. Cir. 1983) ("Where an action combines both patent and nonpatent claims, the nonpatent issues may in some instances be so intertwined with the patent issues that the evidence would, in large part, be material to both types of issues."). In essence, Infineon contends that its defense of equitable estoppel was sufficiently intertwined with the fraud case to justify an award of fees on its counterclaims as well. Rambus has not disputed the assertion that the equitable estoppel defense and the fraud claim are inextricably linked.

In addition to its attorneys' fees, Infineon contends that it should also be awarded its out-of-pocket expenses incurred in the preparation for and performance of legal services related to the suit. *See Mathis*, 857 F.2d at 757.

The Court is mindful that, "when attorney fees under 35 U.S.C. § 285 are awarded solely on the basis of litigation misconduct, the amount of the award must bear some relation to the extent of the misconduct." *Read Corp.*, 970 F.2d at 831.

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waive its asserted attorney-client privilege by describing the work performed, Infineon has abandoned its request for fees on these matters.

Finally, these totals do not reflect the fees paid to the law firm of Slater & Matsil. Infineon claimed those fees as damages for its fraud claim. Had Infineon successfully proven the reasonableness of those fees, it could have recovered those fees. It cannot now circumvent its failure of proof at trial by requesting those fees under § 285 or under Virginia's law of fraud.

[10] Infineon has not sought to recover fees in connection with those counterclaims on which it did not prevail.

See also Beckman Instruments, 892 F.2d at 1553 (noting that the award of fees must be reflective of the severity of the misconduct). However, the award of fees in this case is not predicated on litigation misconduct alone. Instead, Rambus' bad faith began prior to the institution of this lawsuit because its prosecution of infringement suits was part of its plan to fraudulently obtain licensing royalties on JEDEC-compliant SDRAM products. At a minimum, Rambus was grossly negligent in asserting its position on claim construction and infringement, thus rendering its case frivolous. The litigation misconduct is simply *another* basis for a finding that this case is exceptional under § 285. Hence, it is not necessary to link Infineon's claimed fees to each asserted ground of litigation misconduct because Rambus' inequitable conduct and its frivolous litigation position each support the award of all the fees and expenses incurred by Infineon in and of themselves.

The inquiry next focuses upon the calculation of those fees. Without doubt, Infineon is the prevailing party in the patent infringement action and on its actual fraud claim. It is beyond question that Infineon has secured excellent results.[11] Where the prevailing party "has obtained excellent results, his attorney should recover a fully compensatory fee. Normally this will encompass all hours reasonably expended on the litigation." *Mathis*, 857 F.2d at 755 (quoting *Hensley v. Eckerhart*, 461 U.S. 424, 435, (1983)). Of course, calculation of fees under § 285 is governed by the precedent of the Federal Circuit. *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 182 F.3d 1356, 1359 (Fed. Cir. 1999). The Federal Circuit has approved use of a lodestar analysis in the calculation of reasonable attorneys' fees. *See Lam, Inc. v. Johns-Manville, Corp.*, 718 F.2d 1056, 1068 (Fed. Cir. 1983). The lodestar is the number of hours reasonably expended multiplied by a reasonable hourly

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[11] That is true notwithstanding the size of Infineon's monetary recovery because it defeated all infringement charges and secured significant non-monetary relief on its fraud claim.

rate and usually supplies an objective basis on which to make an initial estimate of the value of the lawyer's services. *Hensley*, 461 U.S. at 433. *See also Lam*, 718 F.2d at 1068 ("In determining the reasonableness of the award, there must be some evidence to support the reasonableness of, inter alia, the billing rate charged and the number of hours expended.").

Although the Federal Circuit has not explicitly approved use of the factors listed in *Johnson v. Georgia Highway Express, Inc.*, 488 F.2d 714, 717-19 (5th Cir. 1974) as a basis for determining the reasonableness of the requested fees, those twelve factors have generally been accepted by federal courts in assessing the appropriate amount of attorneys' fees to be awarded. *See SunTiger, Inc. v. Scientific Research Funding Group*, 9 F. Supp. 2d 601 (E.D. Va. 1998) (in assessing the reasonableness of fees under § 285, a federal district court "evaluates attorneys' fees petitions by applying traditional lodestar analysis, multiplying the number of hours reasonably spent on the litigation by a reasonable hourly rate, and then considering the twelve factors set forth in Johnson."), *aff'd* 194 F.3d 1335 (1999).

The process to be followed is to multiply the reasonable hours spent by a reasonable rate, thereby producing the lodestar figure—the presumptively reasonable fee. Then, other considerations may lead to an upward or downward adjustment of the fee. *Hensley*, 461 U.S. at 434; *Saleh v. Moore*, 95 F. Supp. 2d 555, 566 (E.D. Va. 2000), *aff'd* ____ F.3d ____ (table), 2001 WL 585085 (4th Cir. 2001). Those considerations for upward or downward adjustment, cited in Hensley, are the factors outlined in *Johnson v. Georgia Highway Express, Inc.*, 488 F.2d 714. These now commonly-known Johnson factors are: (1) the time and labor required; (2) the novelty and difficulty of the questions; (3) the level of skill required to perform the legal service properly; (4) the preclusion of employment by the attorney due to acceptance of the case; (5) the customary fee; (6) whether the fee is fixed or contingent; (7)

the time limitations imposed by the client or the circumstances; (8) the amount involved and the results obtained; (9) the experience, reputation and ability of the attorney; (10) the "undesirability" of the case; (11) the nature and length of the professional relationship with the client; and (12) awards in similar cases.

However, as the Supreme Court made clear in *Hensley*, "many of these [*Johnson*] factors usually are subsumed within the initial calculation of hours reasonably expended by a reasonable hourly rate." *Hensley*, 461 U.S. at 434 n. 9. Of course, only the factors that apply to a particular case need to be addressed in determining the award of fees. *EEOC v. Service News Co.*, 898 F.2d 958, 965 (4th Cir. 1990). In this case, the applicable factors are numbers 1, 2, 3, 5, 8 and 12. Mindful of these precepts, it is appropriate now to turn to assessing Infineon's fee application.

a. Lodestar

There is no dispute over the reasonableness of the rates charged by counsel for Infineon. There are a few objections, however, to the reasonableness of some of the time entries.[12]

(i) "Mixed" Time Entries

Rambus objects to a few so-called "mixed" entries in the Infineon time records in which the entry contains work that relates to antitrust, civil RICO and contract claims, on which Infineon did not prevail, as well as work related to the fraud claim, on which Infineon did prevail. These objections are not well-taken. To begin, it is clear that Infineon is making no claim for fees related solely to the unsuccessful antitrust, civil RICO or contract claims. (Declaration of Clifford Wilkins ¶4). Rambus recognizes this, but asserts that the so-called mixed entries are not compensable because some of the work therein

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[12] *See generally* Rambus, Inc.'s Opposition to Infineon's Motion for Certain Attorneys' Fees and Expenses, pp. 23-25.

reflected was attributable to claims which Infineon did not prevail. Infineon has properly demonstrated that the contested entries related to both the fraud claim, on which it did prevail, as well as to the claims on which it did not.

(ii) Redacted Entries

Infineon submitted several time records and invoices in which many of the entries were redacted to protect the attorney-client privilege or attorney work product. Infineon has withdrawn all such redacted entries from its fee request and that matter is no longer an issue.

(iii) Inability to Identify the Specific Law Firm to Which a Claimed Fee Relates

Rambus objected that the presentation of Infineon's fee request does not permit, or does not readily permit, determination of which fees are allocable to which law firms. Recognizing the problem created by the format of its presentation, Infineon, in its reply papers, has corrected this problem. Although imprecisely articulated in Rambus' objection, it appears that the principal ground for this complaint is the inability of Rambus to ascertain which of the fees are attributable to Slater & Matsil, whose fees Rambus objects to in their entirety. That issue is moot as respects a calculation of reasonable rates and hours because all of Slater & Matsil's fees are being excluded in any event.

(iv) Tactical Coordination With Counsel in Other Actions Involving Rambus

There are a few entries of time devoted to coordinating with counsel for Hyundai Electronics Corporation and Micron Corp., both of whom are engaged in litigation with Rambus over the same patents that are at issue here and present similar issues of

claim construction, fraud and inequitable conduct. Where, as here, other parties are engaged in litigation with a litigant's adversary in cases which involve the same issues, it contributes to overall efficiency and effective preparation and presentation of evidence if counsel, who share common interests, consult with one another. In fact, the usual course is to consult with lawyers opposing a common adversary. It is done with frequency by organized plaintiffs' and defense bars. So long as there is not an excessive claim for time spent consulting, fees of that sort are compensable. Infineon's claim for fees consulting with lawyers who also oppose Rambus in actions in other jurisdictions involving essentially the same patents and the same issues of fraud have been adequately documented as reasonably incurred here.

b. The Novelty and Difficulty of the Questions Raised

The patent infringement issues are not per se novel. However, the extent to which Rambus based its claim construction on extrinsic evidence made litigation of the patent infringement issues unnecessarily complex. A considerable amount of attorney time was necessary to unravel the deceptive web of claim construction created by Rambus in the testimony of its expert witness, Dr. Huber. Thus, while the issue of claim construction is not novel per se, it was both novel and complex in the way it was raised here and it is entirely reasonable for Rambus to have to pay for the attorneys' fees necessary to unravel its meritless claim construction theories. Also, although the conduct of Rambus at JEDEC was unusual, conduct of that sort has been the subject of several reported decisions[13] and thus is not completely novel. However, here

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[13] *See Wang Lab., Inc. v. Mitsubishi Elec.*, 103 F.3d 1571, 1582 (Fed. Cir. 1997); *Stambler v. Diebold, Inc.*, 11 U.S.P.Q.2d, 1709, 1714-15 (E.D.N.Y. 1988), *aff'd* 878 F.2d 1445 (Fed. Cir. 1989); *Potter Instr. Co. v. Storage Tech. Corp.*, 207 U.S.P.Q. 763, 769 (E.D. Va. 1980), *aff'd on laches ground*, 641 F.2d 190 (4th Cir.1981).

too, the manner in which Rambus effectuated, and then manipulated, the process to its benefit thereafter, was novel and access to the proof of deceit was made quite complex by Rambus, as explained in Section I.A.2 above. Rambus properly can be charged with the fees necessary to penetrate its web of deceit and to uncover the truth.

c. The Customary Fee for Like Work and Attorneys' Fee Awards in Similar Cases

In this action, *Johnson* factor 5 and *Johnson* factor 12 are complementary. As Infineon demonstrated the amount of fees and expenses is consistent with, in fact less than, the amount spent by other parties in similarly complex patent cases (compare the fee request here with the Report of Economics Survey 1999 prepared for the American Intellectual Property Law Association). *See Yamanouchi Pharm. Co., Ltd. v. Danbury Pharmacal, Inc.*, 51 F. Supp. 2d 302, 304 (S.D.N.Y.1999) ("In determining a reasonable rate, the court may refer to American Intellectual Property Law Association (AIPLA) surveys") (citing *Mathis*, 857 F.2d at 755). Further, the amount of fees and expenses sought by Infineon are consistent with what Rambus has publicly reported about its expenses in this and other litigation involving its rights to the same patents. These factors teach that the request of Infineon is a reasonable one.

d. The Amount in Controversy and the Results Obtained

The amount in controversy involves products which are central to Infineon's profitability. The royalties demanded by Rambus would, over the course of the short-term license proposed by Rambus, run into the hundreds of millions of dollars (as can be seen by multiplying Infineon's sales figures by the royalty percentages demanded by Rambus based on its licenses with other manufacturers and requested by Rambus in

its pre-suit demand upon Infineon). Over the life of the patent, the royalties of the patent would be much greater. Thus, it is readily demonstrable here that the case was one of great importance, to both Infineon and Rambus. Additionally, because many of the same issues are presented in other cases to which Rambus is a party and the result here reasonably could be expected to provide a basis for either claim preclusion or issue preclusion in that other litigation, Rambus has conducted its offense and defense by employing a combination of blitzkrieg and Sherman-esque tactics—litigating to the extreme virtually every issue in the case—thereby demonstrating the significance of the case to Rambus and, at the same time, making the litigation of the case particularly expensive to Infineon.

The results obtained by Infineon are excellent. Here, Infineon prevailed entirely on the patent infringement claims and it prevailed upon the central counterclaim of fraud. The fact that Infineon did not prevail upon all of its claims does not in any way detract from the conclusion that the results obtained by Infineon were of great significance. *Saleh*, 95 F.Supp.2d at 576.

In assessing the results, one of the most important factors in any fee award is to ascertain the monetary results of the litigation. *Saleh*, 95 F. Supp. 2d at 574 (citing *Farrar v. Hobby*, 506 U.S. 103 (1992)). The award of attorneys' fees is not measured solely, however, by the amount of the monetary recovery. *See City of Riverside v. Rivera*, 477 U.S. 561, 574 (1986). *Rivera*, of course, involved an interpretation of fees awarded under 42 U.S.C. § 1988 in a civil rights case, but the public policies underlying § 285 are sufficiently analogous to those underlying the requirements of § 1988 that the same principles ought to apply.

In assessing the monetary results, the first point to be remembered is that, in prevailing on the patent infringement claims, Infineon has avoided the obligation to pay hundreds of millions of dollars or more in royalties. Even though the fraud

award was nominal in amount, success on that claim entitled Infineon to an injunction to protect it from the predatory conduct reflected in Rambus' Business Plan and in its subsequent conduct in implementing the plan. That, though not precisely quantified by the record, can be considered a victory of immense proportions considering the expense involved in this litigation and the consequences of it to Infineon. It also must be remembered that the punitive award was ten times the amount allowed by statute. Thus, by any measure, Infineon has achieved substantial and excellent results in this litigation, and the fee award ought to reflect that great success.

Taking into account the reasonable rates, the hours reasonably expended, and the applicable *Johnson* factors, it is quite clear that Infineon is entitled to attorneys' fees in the amount of $5,480,185.64 under § 285.

e. Expenses

Rambus objects to the claim of expenses paid by Infineon, but not because particular expenses are unreasonable or unfounded.[14] Nor does Rambus argue that expenses are not within the reach of the term "attorneys' fees" within the meaning of 35 U.S.C. § 285, and clearly they are so considered. *See Central Soya*, 723 F.2d at 1578 ("The purpose of § 285 is, in a proper case and in the discretion of the trial judge, to compensate the prevailing party for its monetary outlays in the prosecution or defense of the suit."). Rather, Rambus makes a generalized objection to the award of expenses on the basis that the conduct in which it engaged is not of the ilk which permits

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[14] Infineon seeks to recover, inter alia, for travel and lodging expenses, overtime secretarial support, law clerk and legal assistant time, facsimile expenses, computer database legal research charges, long distance telephone charges, Fed Express charges, messenger charges, trial supply expenses and postage. All these charges appear to be appropriately requested. *See Stryker Corp. v. Intermedics Orthopedics, Inc.*, 898 F. Supp. 116, 126, 127 (E.D.N.Y. 1995) (awarding law clerk and paralegal charges, and fees for copying, faxing, telephones and travel).

an award of expenses within the attorneys' fee award under § 285. As explained in section II.B.1 above, that simply is not the case.

The nature of Rambus' bad faith and gross negligence in instigating this case, and the manner in which it was conducted, merits the award of both attorneys' fees and expenses. Therefore, Infineon is entitled to recover expenses in the amount of $1,643,803.88.

II. Attorneys' Fees under Virginia Common Law

"The general rule in this Commonwealth is that in the absence of a statute or contract to the contrary, a court may not award attorney's fees to the prevailing party." *Prospect Dev. Co., Inc. v. Bershader*, 515 S.E.2d 291, 300 (Va. 1999) (citing *Gilmore v. Basic Indus., Inc.*, 357 S.E.2d 514, 517 (Va. 1987)). An exception to this rule in Virginia, however, is that "in a fraud suit, a chancellor, in the exercise of his discretion, may award attorney's fees to a defrauded party." *Id.* at 301. In crafting this exception, the Supreme Court of Virginia instructed that, "[w]hen deciding whether to award attorney's fees, the chancellor must consider the circumstances surrounding the fraudulent acts and the nature of the relief granted to the defrauded party." *Id.* By way of further guidance, the Court identified the factors on which the chancellor focused in deciding to exercise his discretion to award attorneys' fees to the prevailing plaintiff. Specifically, the Court held that:

> The evidence of record . . . demonstrates that the defendants engaged in callous, deliberate, deceitful acts that the chancellor described as a pattern of misconduct, which misled the Bershaders as well as other purchasers of property in the subdivision. Indeed, had the chancellor failed to award attorney's fees to the Bershaders, their victory would have been hollow because, as the chancellor observed:

> "I'm simply unable to see the equity involved in [holding that the defendants] actually defrauded [the Bershaders but they are] going to have to spend . . . over $171,000 in attorneys' fees .... To say that this case was hotly contested by the defendants I think is something of an understatement. It was certainly hotly contested in all respects by the defense. And it was not a precise, surgical defense in this case. It was a global, comprehensive, all inclusive—basically defend everything and deny everything. And I'm not by saying that faulting the attorneys. That was the position taken by the defendants themselves.... It did take an enormous amount of effort by the complainants to prove their case in this situation."

Id.

Thus, *Bershader* teaches that the factors to consider in deciding whether to award prevailing party attorneys' fees include: (1) the record respecting the state of mind animating the fraud ("deliberate," "callous"); (2) the existence of a "pattern;" (3) the scope of the fraud ("misled the Bershaders as well as other" similarly situated persons); (4) whether fees are necessary to make the plaintiff's success meaningful and to ameliorate the effects of the fraud by removing the cost of redressing it from the defrauded prevailing party (absent the fees the "victory would have been hollow"); and (5) the nature of the defense mounted by the party who committed the fraud ("And, it was not a precise, surgical defense in this case. It was a global comprehensive, all inclusive-basically defend everything and deny everything [defense]"). Each of those factors warrant an award of attorneys' fees to Infineon.

As explained previously and in the opinions on the motions for judgment as a matter of law and for injunctive relief, Rambus acted deliberately (pursuant to its Business Plan) and with callous disregard of its disclosure obligations and the

rights of Infineon and other JEDEC members. The fraud involved a lengthy, multi-year pattern of conduct, not just an isolated incident. The fraud affected not just Infineon, but reached an entire segment of the semiconductor industry and many of its products. The award of fees is necessary to make Infineon's victory meaningful and to place upon Rambus the cost of remedying the pervasive consequences of the fraud, which the jury found it to have committed wantonly and maliciously. Finally, as explained previously, Rambus conducted a "global, comprehensive . . . defend everything and deny everything" defense. It not only committed fraud but it sought to, and nearly succeeded in, covering up the proof of its misdeeds. The record here is that the cost (in attorneys' fees) of getting at the proof, presenting it and achieving success in court was great.

Therefore, under the calculus prescribed by *Bershader*, an award of attorneys' fees to Infineon as the prevailing party on its fraud claim is entirely appropriate.[15]

Rambus, does not challenge the amount of the claimed fee except to the extent addressed and disposed of in Section I.B.2.a, *supra*. Therefore, it is appropriate to award Infineon attorneys' fees of $2,382,782.87 in prosecuting its actual fraud counterclaim.[16]

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[15] In defending against Rambus' motion for judgment as a matter of law on the fraud verdicts, Infineon argued that *Bershader* also supported its argument that attorneys' fees could be recovered as an element of damages for fraud. As the Court held in connection with that motion, *Bershader* is more properly considered to be an award of attorneys' fees based on a party's status as the prevailing party, rather than damages to a defrauded plaintiff.

[16] Infineon has also requested an award of its expenses of $736,415.76 under Virginia's common law of fraud. However, the only case Infineon cites to support its claim for fees and expenses, *Bershader*, does not indicate that expenses would be available under the common law of fraud--it speaks only in terms of attorneys' fees. Moreover, Infineon has failed to explain

III. Inherent Equitable Power to Award Attorneys' Fees

As one of the exceptions to the American rule against awarding attorneys' fees to the prevailing party, "a court may assess attorney's fees when a party has 'acted in bad faith, vexatiously, wantonly, or for oppressive reasons.' " *Amsted Indus. Inc. v. Buckeye Steel Castings Co.*, 23 F.3d 374, 378 (Fed. Cir. 1994) (quoting *Chambers v. NASCO, Inc.*, 501 U.S. 32, 45-46 (1991)).[17] Infineon asserts that the same factors which make this case "exceptional" under § 285, warrant the exercise of the court's equitable discretion to sanction Rambus for its vexatious litigation and bad faith.

As part of its request, Infineon asks that this Court not only award attorneys' fees but also allow Infineon to recover the fees incurred by its experts, which total $942,999.26.[18] However, not every case that qualifies as exceptional under § 285 will justify sanctions under the court's inherent equitable power. Moreover, in *Chambers*, the Supreme Court instructs that the "inherent equitable power" of the court should be used as a last resort to punish inequitable conduct. *See Amsted*, 23 F.3d at 379 ("*Chambers* admonishes trial courts to first employ statutory and rules sanctions. Thus, courts should only resort to further sanctions when misconduct remains unremedied by those initial tools ...") (citing *Chambers*, 501 U.S. at 50).

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what expenses might be recoverable under Virginia common law and whether those expenses may differ from the expenses available under § 285 or the Federal Rules of Civil Procedure. The request for expenses under Virginia's common law of fraud is, therefore, denied.

[17] The other two exceptions are (1) the "common fund exception," which derives not from a court's power to control litigants, but instead allows a court to award attorney's fees to a party whose litigation efforts directly benefit others, and (2) a sanction for the willful disobedience of a court order. *Amsted*, 23 F.3d at 378.

[18] Section 285 does not allow for the award of expert witness fees. *See Amsted*, 23 F.3d at 377.

"[W]hen there is bad-faith conduct in the course of litigation that could be adequately sanctioned under the [statutes or] rules, the court ordinarily should rely on the [statutes or] rules rather than the inherent power." *Id.* (quoting *Chambers*, 501 U.S. at 50). "The court should resort to its inherent power only where the rules or statutes do not reach the 'acts which degrade the judicial system.'" *Id.* at 378 (quoting *Chambers*, 501 U.S. at 41-42). Here, the award of attorneys' fees under 35 U.S.C. § 285 and under Virginia's common law of fraud adequately sanctions Rambus for its bad faith in bringing the patent suit and for its fraudulent behavior which infected JEDEC's standard-setting process. Because the exercise of a district court's inherent equitable power should be used only as a last resort where other statutes, rules or decisions do not control, and because 35 U.S.C. § 285 and the Virginia rule in *Bershader* control here, the Court declines to exercise the equitable power to implement the award of expenses by permitting recoupment of nearly $1 million in expert witness fees.

CONCLUSION

For the reasons set forth above, Infineon is awarded a total of $7,123,989.52 in attorneys' fees and expenses under 35 U.S.C. § 285 and $2,382,782.87 in attorneys' fees for prevailing on its fraud counterclaim. Because the attorneys' fees awarded under § 285 and as a prevailing party under Virginia's law of fraud are duplicative, the total amount awarded is $7,123,989.52. Infineon's request for an award of expert fees under the inherent equitable of the Court is denied.

The Clerk is directed to send a copy of this Memorandum Opinion to all counsel of record.

It is so ORDERED.

/s/ Robert E. Payne
United States District Judge

Richmond, VA
Date: August 9, 2001